

THE PSYCHOLOGICAL BULLETIN

A REVIEW OF SIXTEEN-MILLIMETER FILMS IN PSYCHOLOGY AND ALLIED SCIENCES

BY L. F. BECK
University of Oregon

The motion picture as a technique of research and instruction is becoming increasingly important in psychology and related sciences. The major reason for this trend is the fact that behavior sequences recorded cinematographically may be reproduced in the laboratory or classroom as many times as required for minute, systematic analysis. Furthermore, movements or growth changes which occur too rapidly or too slowly during actual metamorphosis to be clearly observed are brought easily within the limits of human perception with ciné apparatus. Especially relevant in this connection are the time-lapse studies of nerve and plant growth in which structural changes occurring over a period of hours or days may be reproduced on the screen in a few seconds.

Although a number of excellent research and instructional films have been produced in recent years, their extensive use in the teaching of psychology has been precluded for 3 reasons. In the first place, not all departments of psychology in the United States are equipped to show even silent pictures, while a very limited number have sound cinematographic apparatus. Second, the rental and sale costs of psychological films are in general high. In the opinion of the writer the payment of fifty dollars for a reel that may not be used more than once or twice per year is, under most circumstances, unwise. However, the rental and transportation costs of the same film for a single screening may amount to a tenth or more of the sale price. Third, many psychological films of merit are relatively unknown because producers have been lax in advertising and dis-

tributing them. Of the films shown at the meetings of the American Psychological Association within the last 5 years, not more than one-fourth are currently listed by national film libraries.

In order to encourage a wider use of instructional films in psychology, and concomitantly to aid in the partial solution of the problems encountered when such use is essayed, the films of psychological interest have been assembled in this review.¹ The content of each film is briefly discussed, and in the bibliography are given data about the distributor, date of production, length, rental and sale costs, and the type of each film, *i.e.* whether silent or sound.² In some instances references to relevant published material are furnished as well.

Inasmuch as sixteen-millimeter cinematographic apparatus is now virtually standard in the educational field, attention has been confined to films sixteen millimeters wide. A number of thirty-five-millimeter films are extant, but only in rare instances are identical sixteen-millimeter prints not available.

FILM CATALOGS AND SOURCES

Several useful reference works dealing with instructional motion pictures are published currently. The *Educational Film Catalog* (330) and *Supplements* (331), and *Motion Pictures of the World* (340) give short descriptions of all listed films, but none has exhaustively canvassed the psychological field. Other general sources include the *Blue Book of Non-theatrical Films* (333) and catalogs distributed by manufacturers of motion picture equipment (325, 341), producers of instructional films (328, 329, 337, 338), and film libraries (325, 326, 327, 332, 334, 335, 336, 339).

From time to time reviews of films have appeared in the *Psychological Abstracts* and titles of films have been listed on the program of the American Psychological Association and published in the *PSYCHOLOGICAL BULLETIN*. In the bibliography references

¹ Many biological and medical films of psychological interest have been omitted because of insufficient data. These films, along with others, will be included in a subsequent review.

² As a rule a film should be previewed before it is purchased inasmuch as the quality of photography, continuity, and content of psychological pictures varies excessively. Generally speaking, distributors of films either will sell their pictures on approval or will rent them with the understanding that the rental price will be deducted from the purchase price if the picture subsequently is bought.

are given to all reviews of films which have been printed in the *Psychological Abstracts* and elsewhere.

PRODUCTION AND USE OF FILMS

The fundamentals of silent and sound cinematography are demonstrated in a series of films which deal with the following subjects: animation (30), ultra-slow motion (153), mechanical principles of the motion picture projector (31), construction of motion picture sound equipment (57), techniques of sound recording and reproduction (17, 20, 33), and news cinematography (60). Of interest is a film shortly to be released by Bergman (91) which delineates cinematographic techniques and methods of editing scientific motion pictures. The proper use of sound films in teaching is shown in a picture made and distributed by Erpi Picture Consultants (75). Although the units of instruction are organized at the precollege level, the film contains several practical suggestions for the general use of sound pictures.

Pathé News (54) has prepared an interesting picture which traces the history of photography. Scenes in the film show the origin of both still and motion pictures and depict later advances in cinematography.

FILMS OF PSYCHOLOGISTS

Fortunately, motion pictures have been taken of many contemporary psychologists. One of the best sequences is the short Titchener film which Miles (252) photographed during the meeting of the Experimental Psychologists at Harvard in 1927. Excellent "shots" of Titchener, Robinson, Boring, Langfeld, and Dodge, among others, are presented. The film of the International Congress of Psychology, which was photographed by Dallenbach in 1929, contains a splendid series of informal poses of Cattell, Piéron, Spearman, Lewin, Myers, McDougall, and Pavlov. Since 1929, Dallenbach (104) has continued to add pictures to his library and now has an extensive cinematographic series of American and European psychologists. A similar, but shorter, film is owned and distributed by Trow (299).

DEVELOPMENT OF BEHAVIOR

Heredity. A motion picture illustrating the principles of heredity is being filmed currently by Gaumont-British Pictures, Ltd. As soon

as this picture is completed, it will be released through the Gaumont-British Pictures Corporation of America (26).

Reproduction. The U. S. Department of Agriculture (58) has made a series of cinemicrographs of spermatozoa attacking the ovum. These pictures also show the significant stages in the cell division of the fertilized egg. Bell and Howell (67) distribute a film which portrays the principles of fertilization, conjugation and cell division in plants and lower animals. The Bray Pictures Corporation (68) has in its "Science of Life" series two films which depict the reproductive cycles of both higher and lower forms. A film by Rugh (265) covers ovulation in the frog and shows the normal reproductive processes induced out-of-season by the injection of anterior pituitary hormone.

Embryonic and Fetal Growth. The technique of mounting a bird embryo is shown in an Eastman film prepared by Patten (15). By photography and animation the action of the chick's heart, the establishment of circulation, and the development of the yolk sac, amnion, and allantois are shown. Stone and Kramer (292), employing time-lapse photography, trace the growth of a salamander from the one-cell stage to the adult feeding period. Details of cell division and the formation and closure of the blastopore and neural folds are vividly represented. Some embryonic movement is depicted. Speidel (287) by means of time-lapse photography follows the growth and repair of nerves in the tail of the tadpole. These pictures reveal with startling clarity the processes of growth and myelination, irritation and recovery, and degeneration and repair of nerves.

Prenatal and Early Postnatal Behavior of Animals. Prenatal development of behavior in the cat and the guinea pig has been studied and recorded photographically by Carmichael and his students (97, 99).

The technique of preparing the adult animals so that the fetal organisms may be observed under approximately normal conditions is illustrated. Selected stages of fetal reactions in the cat from the twenty-second day of gestation up to and including a few sequences of air-breathing kittens are given. With the guinea pig the film begins with pictures of the fetus just before the onset of motility. Selected sequences show early responses and later developmental stages, separated by a few days each, up to the period of normal birth. These pictures illustrate the joint onset of discrete reflexes and so-called mass movements in the prenatal animal.

A second film (98) of the guinea pig delineates in considerable detail the response of fetal specimens to pressure stimulation. Light

and heavy pressure stimuli are applied by means of calibrated Von Frey aesthesiometers. Responses of 35-day, 45-day, 51-day and 61-day fetuses are shown. The photography is such as to show the fetus with high magnification on the screen.

Kuo and Carmichael (210) trace photographically the development of behavior in the chick embryo. The shell is made transparent by the Kuo technique and the period prior to somatic motility, when the heart beat alone is observed, comprises the initial scenes of the film. Sequences are then shown at each typical stage up to and including hatching behavior and the behavior of the newly hatched chick. The film includes, for comparison purposes, still pictures of the external appearance of the chick embryo at typical stages. Valentine, Wenrick and Sarbin (316) exhibit the behavior of the chick during hatching and during the pecking, drinking, preening and perching stages for thirteen days after hatching. Pecking of chicks that have been kept in the dark is delineated in a short film by Ford (162), and a longer picture by Sarbin, Green and Meckler (267). The former compares the reactions of normal chicks with chicks kept in the dark for seven days, while the latter film extends the comparisons over a period of thirty days. The postnatal locomotor responses of the rat, including crawling, righting responses and running, are recorded in a film by Valentine (305).

Infant and Child Behavior. For convenience of discussion, the films pertaining to infant and child behavior are divided into two groups: (a) records of behavior patterns, and (b) experimental and clinical techniques. (a) The behavior of the neonate consists of diffuse, mass reactions plus a number of more or less discrete reflexes. The mass activity of a hungry, week-old infant is illustrated in a film by Valentine (303). In this same picture evidence is afforded that restraint may produce sleep and not rage as Watson averred. The neonate's reflexes are recorded in several pictures (87, 236, 263, 273, 296, 303, 318), the precursor being the film by Watson (318) which was photographed in 1919 and shows the grasping and Babinski reflexes, defensive movements to pinching, and blinking, orientation to lights, absence of swimming movements, and some basic emotional reactions. Richards and Irwin (263) give a detailed photographic account of plantar reactions, exhibiting procedures and types of stimuli and the variability of the plantar response. Bayley and Jones (87) briefly demonstrate the Moro, grasp-suspension, patellar, and Landau reflexes and head nystagmus to rotation. McGraw (236) in the first reel of the early life of

"Jimmy" and "Johnny" also illustrates the Moro and suspension grasp reflexes, plus the postural adjustments to an inverted position and voluntary reaching-prehensile reactions. This film, besides demonstrating the reactions mentioned, affords a comparative study of the twins' early behavior.

The most extensive group of films dealing with the first year of life is that produced by the Yale Clinic of Child Development under the direction of Gesell. These pictures comprise a naturalistic and a normative series.

The former portrays the behavior of normal infants under the natural conditions of domestic life and embraces a quaternary of talking pictures; namely, a behavior day at 12 weeks (172), 36 weeks (184), 48 weeks (173), and early social behavior (176). The normative series is made up of 6 sound films dealing with the growth of posture, locomotion, prehension and adaptive behavior at lunar month intervals through 56 weeks of age. In the picture of the early stages of infant behavior (178) Gesell deals pictorially with the concept of a developing behavior pattern. The postural responses of a boy at 12, 16 and 20 weeks are shown in quick succession. His cube behavior at these same ages is analyzed by means of slow-motion, coincident projection. In a study of the later stages of growth (179) Gesell delineates the further stages in the patterning of cube behavior at 24, 28, 40 and 52 weeks. The behavior at 40 weeks is portrayed in detail to emphasize the preëminence of the index finger in the patterns of manual behavior. At 1 year (174) an intensive study is made of the infant's proficiency in manipulating a cup and spoon, pellet and bottle, ring and string, paper and crayon, a performance box, and a form board. This reel is especially important from the standpoint of reflecting the adaptive behavior of the child. Significant steps by which the infant advances from the helpless state of immaturity to the stage where he walks and runs are delineated in a pair of companion films (177, 182). The intermediate stages of reflex stepping, rolling, pivoting, rocking, sitting, creeping, standing, and cruising are illustrated. The rôle of maturation in the behavior of the infant is reviewed in a final film (180), which rounds out the normative series. A popular account of Gesell's work is provided in the film, *Life Begins* (181), which comprises selected portions from 6 reels reviewed above (172, 176, 177, 179, 180, 183).

The problem of maturation *versus* practice is most adequately treated in the films by McGraw (236). Johnny, the recipient of special training, is compared with his twin brother Jimmy, the tyro, in swimming, skating, getting off pedestals, and jumping from pedestals of varying heights. In these performances Johnny exhibits a clear-cut superiority, although special practice seems to have had no appreciable effect upon the ascendance and decline of the Moro, grasp-suspension and other reflex patterns present at birth.

Other films which delineate certain aspects of motor development

in the infant have been prepared by Bayley and Jones (88), Valentine (304, 306, 307, 311, 313), Lewin (219, 226), and Gesell and Halverson (186).

An extensive series of films which deals principally with the acquisition of perceptual and social behavior in infancy and childhood has been prepared by Lewin and his students. The pictures are organized to illustrate various properties of the psychological milieu in relation to the needs of the child. The operation of field forces such as valences and barriers are concretely illustrated. The child who is fed porridge waves his arms and legs in the direction of the goal (positive valence). The same child, however, recoils when given lemon juice (negative valence). When refused a desired toy, a child of five "leaves the psychological field." These and other illustrations are contained in an initial film by Lewin (218). A second film (220) reveals that positive valences may sometimes act as temporary impediments to performance. A child wants to sit on a stone; yet he watches it constantly, making the end response impossible until the "field is reorganized." Additional examples of insight are found in the film, *Simple Detour Experiments* (225). The rôle of substitute satisfaction is exhibited by a child, 2 years and 9 months old, who wants to pet a dog but is afraid. Instead he pets another child who holds the dog. Lewin further shows that repetition of an activity leads to variation in response. The activity becomes more and more superficial until the child loses all interest, that is, he becomes psychologically satiated (224). The films dealing with play (222) show how real and fantastic properties are interwoven, and how the degree of freedom is altered by the presence of a dominating adult. That the child does not perceive his actions as a part of his achievements in the same way as the adult is clearly shown (221). The greater "fluidity" of the psychopathic child as compared with the normal, his lack of determination and his emotional instability, are delineated in another picture (223).

A further group of films with sound accompaniment have been prepared by Lewin and his students. These pictures portray certain procedures in helping the child to eat (227, 228, 229, 230), the nature of substitute eating (231), the effect of distance between the child and the adult upon social pressure (232), and babbling (215).

Cruikshank (101) has made an interesting photographic study of perceptual size-constancy in infancy. Rattles of different sizes were placed at various distances in front of infants 3 to 6 months old. The reactions of the infants to near and far rattles are clearly portrayed.

A comparative study of a human infant and a young chimpanzee raised together in typical human surroundings was made by Kellogg and Kellogg (200-203). Four reels of motion pictures of the 2 infants' activities were taken. Reels 1 and 4 delineate naturalistic activities engaged in by each infant before and after living together for 9 months. Reels 2 and 3 depict initial and terminal performances on some simple tests, as, for instance, sound localization, hand-preference, use of simple tools, delayed reaction, and others. A delightful motion picture by Raven (262), which is somewhat similar to the non-experimental series of the Kellogg's, portrays the exploits of Meshie, the child of a chimpanzee. Meshie was a household pet for 4 years and most of the pictures show her playing with the children, riding a tricycle, and even holding and feeding a human baby when the latter was only 2½ months old.

Doll and Longwell (147) outline photographically the course of development of children with cerebral birth lesions. Retardation in motor development is shown in 3 youngsters, ranging in chronological age from 3 to 16, whose motor abilities do not exceed those of a normal six-months-old infant. Gesell (175) has in preparation a picture which will deal with the effects of birth injury on child development, and Gesell and Amatruda (185) are completing a film which will show the influence of thyroid therapy in cretinism.

Turning now to part (b) of this section, it is found that a number of pictures have been produced which are devoted in part or exclusively to demonstrations of experimental and clinical techniques for studying infant and child behavior.

The clinical and research activities of the Yale Clinic of Child Development are surveyed in a film by Gesell (183). The regime of the California Nursery School is illustrated by Jones (196). Similarly, Firestone and Firestone (154) photographically follow one child through the program of the day at the University of Michigan Nursery School, and Olson and Firestone (259) outline the program of the Child Development Laboratory.

Bayley and Jones (87) exhibit some sample performances on the test items of the California First-Year Mental Scale and the California Scale of Motor Ability. In a talking film Sartorius (268) gives an abbreviated introduction to the original Stanford-Binet scale. Sample test items from 7 different year-levels are demonstrated. Buehler (94), using sound photography, demonstrates her scale which calls for the measurement of sensory acuity, reactions to social situations, and imitation in infants and preschool children. Silent films exemplifying testing techniques have been produced by Hildreth and Katz (189), Miller (254), and others (45).

McGraw and Weinbach (238) illustrate a quantitative method for studying erect locomotion, and McGraw and Price (237) show the behavior of infants

confronted with the Plate Glass Test. Techniques for studying learning in young children, the results of which are discussed more fully in a subsequent section, are photographically presented by Wildenberg and Irwin (320), Krasnogorsky (260, reel 5), Kantrow (199), and Jones (197).

THE RESPONSE MECHANISM

Receptors and Receptive Processes: (a) Vision. The structure and function of the sense organs can be illustrated to advantage by using animated models. This technique has been employed in several films which deal with the human eye (18, 34, 36, 81). A good current picture of the ocular apparatus is a Gaumont-British sound-on-film subject (81) which shows in detail the structure of the eye and compares it with the optical system of a camera. A comparative study of the eye and various other optical systems is made in the Eastman film on optical instruments (52).

(b) Audition. In the opinion of the writer, 2 of the most remarkable instructional pictures that have been produced are *Sound Waves and Their Sources* (213) and *Fundamentals of Acoustics* (212). By using a high speed camera, an oscilloscope, animation, and accompanying sound effects, these pictures clearly portray the relationships between periodic pressure variations in air and the auditory correlates of loudness, pitch, and timbre. The action of the tympanum, the ossicles, and the fluid media of the internal ear are shown in animation. Additional phenomena explained or demonstrated with sound accompaniment include the human audibility range, loudness attenuation, and the elimination of high and low frequencies in speech and music.

Two short silent pictures dealing with the auditory process and sound waves are distributed by Bray Pictures Corporation (35, 72).

(c) Static Sense. A very short film by Ford (165) demonstrates the use of the Barany chair and the general disturbance of postural reflexes following rotation. A longer film by Valentine (310) shows adaptation to rotation, post-rotational nystagmus, past-pointing, falling and other common responses to vestibular stimulation. A terminal sequence exhibits head nystagmus in pigeons and head movements of an infant during rotation.

Nervous System. A recent talking picture produced by Gerard (171) gives a graphic introduction to the structure and function of the cerebrospinal nervous system. The major parts of the frog, cat, and human brain are illustrated and compared.

The concept of the spinal reflex arc is developed with animated diagrams, and the effects of transecting the dorsal and ventral roots of the cord are exhibited in a cat with anesthesia and paralysis, respectively, of its rear limbs. Nervous impulses are diagrammatically represented as areas of local excitation spreading along separate fibers. Depolarization of the nerve fiber is explained with accompanying animated diagrams. Nervous impulses from the paw and cerebrum of the cat and from the human brain are led to an oscillograph and loud speaker where they are made visible and audible. The film closes with a brief review of the rôle of nervous impulses in behavior.

Photography, sound, and continuity of the picture are splendid. The major criticism is one of omission; namely, that no mention is made of the autonomic division of the nervous system. A silent film by Ford (161) makes use of Lillie's model of a nerve to illustrate the nervous impulse. This picture attempts to show the principle of nervous summation, the nature of blocking, and the correlation between impulse frequency and strength of stimulation.

Effectors and Levels of Response. The structure and the use of the muscles, both striated and smooth, are exhibited by means of actual photography and animation in an Eastman film (48). Laboratory demonstrations to show the contraction of a muscle, the effect of a series of stimulations, the nature of sustained contraction, and the recording of muscle fatigue are given in this Eastman picture.

The structures basic to the production of speech sounds are shown in 2 different pictures. In a Bray (37) picture, combinations of X-ray photography, ordinary photography, and animated drawings are used to demonstrate the functions of the nasal passages, epiglottis, vocal cords, larynx, lips, and tongue in producing sound. Tiffin (295), using stroboscopic photography, obtained some remarkable slow motion pictures of the vocal cords and associated structures in action.

The levels of response are delineated by Freeman (168) in a carefully edited film. The contrast between reflex and voluntary reactions is clearly shown. The concept of the tropism is developed in a picture by Navez (257). Tropisms to gravity, light, contact, water currents, and a galvanic current are presented.

One of the best pictures made before the advent of supersensitive film is that by Bergman and Pike (92) treating of reflexes, spinal, decerebrate and normal. Employing the cat and dog as experimental animals, the patellar, Achilles, scratch, tail-twitch, pinna, eye-blink, and crossed-extensor reflexes, among others, are demonstrated in the spinal and decerebrate preparations. Smith and Carmichael (286) illustrate postoperative disturbances of visually controlled behavior in

the cat following complete bilateral removal of the visual cortex. Shown are disturbances of palpebral responses, righting reactions, optic nystagmus, placing reactions, avoidance of obstacles, and intensity discrimination. Klüver (208) illustrates the reactions of a cortically blind monkey, and in a second picture (207) shows a Rhesus monkey with "psychic blindness." Culler (103) succeeded in completely decorticating a dog. The film shows distinctive postures as well as rage under slight provocation. A clear-cut example of decorticate conditioning to a loud sound is included.

The severe behavioral handicaps associated with intracranial birth lesions are depicted in 2 films by Doll and Longwell (149, 150). Athetoid and spastic reactions are brought into comparison.

ANIMAL AND HUMAN LEARNING

Conditioning. Techniques and results of conditioning experiments with infants and children are illustrated in several films.

Jones (197), in a film portraying sundry techniques for studying learning, gives an example of a conditioned response in a two-months-old infant. Wildenberg and Irwin (320) and Kantrow (199) provide views of their recording apparatus and the preparation of the infant for the conditioning demonstration. The elicitation of a conditioned feeding response is shown in a number of trials. Krasnogorsky (260, reel 5) exhibits apparatus which automatically releases a biscuit into a youngster's mouth and records movements of the jaws in chewing. Conditioned feeding reactions to pressure and sound are established in a child who appears to be about 6 years old.

The film, *Behavior of Man and Animal* (260), is a six-reel, silent picture allegedly produced under the direction of the late I. P. Pavlov. Although one would expect a few sequences of Pavlov at work in his laboratory, only a single picture of this kind is shown, and it obviously is a reproduction from a still photograph. The first reel of this Russian film is non-experimental in nature, merely showing various animals at the zoo being fed. The second reel demonstrates some simple physiological experiments with a spinal frog and introduces the concepts of inhibition and irradiation. The third reel, the best of the 6, shows the unconditioned salivary response in dogs and the procedure by which it is conditioned to the beat of a metronome. The conditioned defense reflex also is exhibited. The fourth reel shows the loss of a conditioned reaction to a visual stimulus following ablation of the occipital lobes in a monkey. The fifth reel presents the method used by Krasnogorsky in conditioning experiments with children. The final reel is a naturalistic picture showing children at

play, and like the first is related only remotely to the rest of the film. This picture as a whole does little to support the popular belief that Pavlov's experiments were rigidly controlled. In the experiment with the monkey which was trained to discriminate between a rapid and a slow beat of a metronome, the metronome was placed in full view of the animal so that it could use either visual or auditory cues. In another experiment on the discrimination of colors, the chromatic discs did not fill the apertures of the apparatus, so that the animal might well have been responding to differences in contour rather than color. Finally, in the print seen by the writer many of the animated diagrams carried legends written in Russian, and to add to the confusion, some of the English titles were misplaced.

Culler (102) shows a carefully standardized method of motor conditioning in dogs. The animal responds by withdrawing the foot from a metal grid when the substitute stimulus (tone) is applied. Liddell (234) in his studies of conditioned responses in sheep also uses the defense leg retraction from an electric shock. The animal is trained to display the conditioned response to 120 beats of a metronome, but not to a frequency of 50 beats per minute. The excellent film by Zener (324) deals principally with conditioned salivation in dogs. Variation in the conditioned response is effected through changes in the hunger of the animal, by experimental extinction, and by altering the position of the animal within the experimental situation. The Zener film closes with a few sequences showing conditioned withdrawal behavior in infants.

Mazes, String Pulling, Problem Boxes, and Related Techniques. The popularity of the rat as an experimental animal is attested to by the number of films devoted to his behavior. Ford (157), in an early film, illustrates how a rat is trained to discriminate between a lighted alley and a darkened cul-de-sac of a simple T-maze. Maier (240) provides a photographic record of a rat traversing a Michigan maze composed of seven blinds. After an unimpressive start and an unusually erratic seventh trial, the animal executes perfect runs on the eighth and ninth trials. Due to the capricious nature of the animal's maze behavior, however, this film is not as desirable for demonstrational purposes as a second picture by Maier (239) which shows the performance of rats with brain lesions on a three-way, elevated maze. Maier and Crudden (241) illustrate the acquisition of discriminative behavior by rats. Using the Lashley jumping technique, the animals are trained to jump to the larger of 2 white circular areas on a gray background. After the discriminative

response is firmly established, certain characteristics of the stimulus pattern are altered, and it is shown that various animals respond to different attributes of the pattern.

The behavior of the rat in discriminating between a vibratory and non-vibratory platform is shown in the picture by Skolnick (274). The performance of an untrained and trained animal is compared and the behavior of the animal near the upper limit of vibratory sensitivity is indicated.

Jackson and Warden (195) exhibit the activity of a white rat in the Warner-Warden maze, the Jenkins Problem Box, and the Columbia Obstruction Apparatus. Valentine (309) also demonstrates Warden's method of measuring drives.

Miles (250), in a study of psychological differences between the behavior of the carnivorous ferret and the rodent rat, exhibits the performances of each animal on an elevated maze and in a midway maze. The elevated linear maze proved to be ill-adapted to the roving, searching behavior of the ferret, which led Miles to design the midway maze. Even on this maze the ferrets, because of their ceaseless exploratory activity, eliminated errors less rapidly than the rats. The final sequence of the film shows mature rats and ferrets in the same cage with the killing response absent in the ferrets. In a second film Miles (248) illustrates the effects of various drugs, including alcohol, on the maze behavior of the rat.

Spragg and Nissen (289) outline some maze experiments with chimpanzees in which a photographic analysis is made of the displacement of critical responses in spatial and temporal stylus mazes. The performance of apes in a maze situation is illustrated nicely in this picture.

A splendid picture of learning in cats has been made by Horton and Guthrie (191). This film affords a detailed record of the successive escapes of several cats from a puzzle box. The first reel of the motion picture produced by Schlosberg, Coronios, Trueblood, Smith, and Carmichael (269) shows sequences of fetal behavior, food preferences, and reactions of cats in a puzzle box. The second reel treats of string pulling and the capacity of the cat to respond to visual forms. Smith (285) shows cats responding to 2, 3 and 4 forms simultaneously. The animals are able to discriminate even after the test patterns have been markedly decreased in size, inverted, or altered in other ways.

The temporal relations of behavior in the chimpanzee are depicted in the film by Forster and Nissen (167). Nissen and McCulloch (258)

show that chimpanzees can be taught to select 1 of 12 compartments which differs from the others in a single respect such as color, brightness or form.

Use of Tools, Gestures, and Symbols. The film by Klüver (209) shows the adjustments made by monkeys in situations demanding more and more complex forms of instrumentation. The use of sticks, hooks, sacks, and other objects to obtain food beyond the monkey's reach is delineated first. In the second part the food is suspended from the ceiling and the monkey employs sticks, boxes, and string to reach the food.

The film by Burbridge and Yerkes (95) marks the inception of the experimental study of gorilla behavior. Congo, a young mountain gorilla, is given a number of psychological tests, and the animal's original solution of the box-stacking problem is exhibited in the picture. Jackson (193) shows the use of tools by a chimpanzee in the solution of problems. The animal is provided with sticks, strings, and levers, all of which are used to advantage in obtaining food. Wolfe (321) shows the chimpanzees working for token rewards which are exchanged by the animal for food, drink, or escape from the experimental situation. A film produced under the supervision of Pavlov (261) portrays how chimpanzees reach food by piling blocks, and by using properly shaped sticks to open a puzzle box. This film also shows the animals reaching food behind a flame by learning to put out the flame with water. At first the water is carried in a vessel, and in the absence of a vessel, the animals carry the water in their mouths.

Coöperative behavior among chimpanzees is demonstrated impressively in the picture by Crawford and Nissen (100). Pairs of chimpanzees pull ropes attached to a heavily weighted box in order to obtain food. Inasmuch as the box is too heavy for one chimpanzee to move, it is necessary for the animals to coördinate their efforts. In learning to coöperate there is much waiting, watching, and responding to a partner's pulling. In the final stage, as the picture shows, one chimpanzee may actually solicit the help of his companion.

Kellogg and Kellogg (201, 202) compare the proficiency of a young chimpanzee and a human infant in test situations which require the use of a chair, a hoe, and similar tools. Lewin (225) shows the behavior of a one-year-old child in a number of simple detour situations. In one case the youngster is separated from the goal by a U-shaped barrier, while in another instance the same child wants to take rings from a vertical rod. The film shows the nature of the diffi-

culties involved, and the different stages of insight. McGraw (236), in reels 7 and 8 of her picture on the sequential development of human behavior patterns, shows the purposive manipulation of pedestals and graded boxes by "Jimmy" and "Johnny."

Various aspects of the mental processes involved in the problem-solving of human adults are portrayed in Trow's film (301) which shows students working on a two-dimensional puzzle. Ford (164) has a short film containing several series of nonsense syllables to be used in studying rote human learning.

PERCEPTION

Range of Perception. A suitably prepared film may be substituted conveniently for a tachistoscope in the traditional "range of attention" experiment. The film by Metfessel and Warren (246) contains groups of nonsense syllables, unrelated consonants, unrelated words and familiar words. The Ford film (166) is made up of irregular dots, orderly arrays of dots and lines, incomplete figures, and a miscellaneous series of figures by which the effects of mental set, complexity, and training may be exhibited. The film by Beck (90) comprises 90 groups of 9 letters arranged in chance order. Each group is presented to the right, left, or both sides of a pre-exposure fixation point.

Phi Phenomenon. The introductory views of a film produced by Ruckmick and Greenwald (264) show common perceptions of movement in everyday life, such as animated signs, rotation of car wheels, and the passing of scenery as seen from a moving automobile. The main portion of the picture illustrates various phases of alpha, beta, gamma, and delta types of apparent movement. The phi film produced by Metfessel and Joel (244) likewise illustrates beta movement and also depicts the influence of time, distance, and the observer's attitude on apparent movement. The short film by Ford (158) contains some of the phenomena reported by Wertheimer.

Attention and Illusions. Musgrave and Metfessel (256, 245) have produced one film showing the determiners of attention and another illustrating the Müller-Lyer illusion. The former film shows the 5 factors of magnitude, intensity, motion, quality, and repetition. In the latter film various lengths of the Müller-Lyer illusion are offered for the purpose of comparison.

Depth Perception. Employing the technique of animation Kinsey (205) illustrates the monocular factors of relative size, position, intervention, and perspective. With various techniques

Stanton (290) depicts the several monocular factors in depth perception, including chiaroscuro and relative distinctness. Animation is used to illustrate the mechanism of accommodation and the binocular factor of convergence.

Reading. The operation of the ophthalmograph and its use in diagnosing faulty eye-movements is explained in the film by Valentine, Troyer, and Brown (315). Fixational pauses, forward sweeps and regressive movements of the eyes are demonstrated with both good and poor readers. In a picture with excellent detail Miles (249) shows the movements of the hands of the blind as they scan pages of Braille. The left hand is shown following the right until about two-thirds of the line is read, when it drops down and explores for the beginning of the next line. The picture ends with a short sequence of a press for printing music in Braille.

Accuracy of Perception. Metfessel and Warren (247) have adapted certain scenes from a commercial cinema to be used for testing the fallibility of human perception.

EMOTIONAL REACTIONS

In large classes it usually is difficult to demonstrate the physiological counterparts of emotion. The demonstrational film produced by Valentine and Stanton (314) shows to advantage the changes in respiration, blood pressure, skin resistance, and hydrogen ion content of the saliva to emotionally arousing situations such as a pistol shot, handling a rat, vile odors, and a slap on the cheek.

Detailed cinematographic records of the startle pattern have been taken by Landis and Hunt (211). In psychopathological patients there are marked individual differences. The schizophrenic patients show strong reactions, while the epileptics exhibit weak responses. About one-fourth of the epileptics show no movement at all, even the eye-blink being absent.

Wessell and Carmichael (319) photographed 20 dynamic patterns of expression involving only the hands and arms of an experienced actor who attempted to represent different emotional states by manual gestures. Titles in the film give the emotion which the actor intended and the emotion judged by a large group of subjects. In a cleverly executed picture Gluckens (49), by means of cartoons, shows how the muscles of the face form the expressions of mirth, anger, fright, and doubt.

The emotional reactions of infants were photographed first by Watson (318) and later by Sherman (272). The reactions in the

former picture were interpreted by Watson as showing fear, anger, and love. The Sherman picture is an experimental film, the results from which called into question the conclusions of Watson. Anger responses in young children are delineated in a film by Lewin (214), while some of the consequences of excess fear in childhood are emphasized in a popular picture distributed by Bray Pictures Corporation (19). A picture which purportedly reveals some "secrets of the soul" and bears upon psychoanalytic theory is distributed by Schneider (70).

ACTION, MOTOR SKILLS AND FATIGUE

Reaction Time. A demonstration of the Dunlap synchronous motor chronoscope as it is used for measuring reaction time is provided in the picture by Ford (163). A similar demonstration of the Klopsteg impulse counter is given in the film by Tiffin (294). In both pictures the temporal differences between simple and choice reactions are plainly visible. Measurements of reaction time in football charging have been recorded by Miles (251). Through the use of an ingenious multiple chronoscope, marked individual differences among the linemen of a college team are revealed in this film.

Motor Aptitude. Sample performances on the 6 tests of the original Stanford Motor Skills Unit are depicted in the picture by Seashore and Miles (271). The tests have been greatly improved mechanically since this picture was taken; hence, the picture is primarily of historical importance. Tests of motor aptitude of a sort different from those in the Stanford Unit are demonstrated in the film by Ford (160). Competitive pairs of students are shown working together on the slot-board test, the bolt-assembly test and stylus tapping, among others. In another film Ford (159) illustrates a cinematic technique of analyzing manual operations in a garment factory. The movements in ironing are reduced to animated line diagrams which show better than the operations themselves the complicated action patterns in the ironing performance. The poor photography in this film, however, detracts from its rich content. The picture by Drake (152) shows some aptitude tests for industrial employees. The measures include a dual pin board, 90-degree controlled turning, left-right turning, "wiggly" block, motor rhythm, and 3 inspection tests. Close-up sequences and a Gilbreth clock permit the film to be used for motion analyses.

Fatigue. The general problem of fatigue in industry is treated in the Russian picture distributed by Amkino Libraries (65). Through-

out the latter part of this film the correlation between fatigue and human inefficiency is stressed. The Dodge Motor Car Corporation (266) sponsored a motion picture which exhibits the nature and dangers of auto-fatigue. The film shows that drivers were assigned to different cars and were examined before and after long motor trips on tests of eye-hand coordination, postural steadiness, fluctuation of attention, color naming, mental addition, and vascular skin reaction. Accidents in driving are shown to be contingent upon an excess of auto-fatigue. Although this sound film was prepared mainly for advertising purposes, it has merit in showing the use to which psychological measures are put in industry.

PERSONALITY, GUIDANCE AND EDUCATIONAL PROBLEMS

A variety of films which portray pseudo-scientific methods of appraising human personality are available. Through the medium of the cinema one may have his "stars" read (86), his horoscope told for any month (59), and he may compare his hands (66) and his feet (23) with those of famous persons. In a well edited and interesting sound film Freeman (169) contrasts the claims of the pseudo-scientific "experts" with the results of modern testing techniques for evaluating personality.

The picture produced by the Educational Research Association (83) gives a survey of the job situation in 1929 and at present. This picture stresses the necessary preparation for securing good jobs and gives several illustrations from actual life situations. It includes information about the application and the interview, and provides hints to applicants for impressing a prospective employer.

An excellent sales training film is *The Art of Selling* (5). This picture makes an analysis of customer-types and shows the right and wrong ways to handle so-called difficult customers.

The film by Kitson (206) on vocational guidance has little value from the standpoint of student counseling. Likewise the films by Smith (276-284) and others (14) merely outline the type of work required in different vocations and offer no help to the counselor. The film by Allen (1), on the other hand, delineates a working plan of guidance for the public school. The first reel of this picture stresses the need of objective data and the keeping of complete personnel record cards, while the second reel shows how the school may function as an employment office.

Kilpatrick (204) expounds the principles underlying "creative"

or "progressive" education. Stone (291) shows the modern primary teacher at work. Gates (170) offers some hints on the teaching of reading and Buswell (96) illustrates 3 diagnostic techniques for studying individual differences in arithmetic. About half of this latter picture is devoted to the demonstration of an eye-movement camera. As a group, this series of teacher-training films is somewhat superficial.

ABNORMAL BEHAVIOR

Modern institutional care of mental defectives is shown in the films of the Vineland Training School (148) and the Fairbault School and Colony (71, reel 3). Certain phases of the work with the mentally retarded child in regular schools and in special institutions are outlined in the film by Trow (300). The Visual Education Department of the University of Minnesota (71) has prepared a five-reel picture which shows (a) the use of verbal and non-verbal tests for estimating the intellectual level of aments (reels 1 and 2), (b) the institutional care and training of the feeble-minded (reel 3), and (c) various clinical types including microcephalism, hydrocephalism, mongolianism, cretinism, Little's disease and others (reels 4 and 5). The film by Ford (155) contrasts the performance of 2 normal and 2 feeble-minded subjects on the block-assembly test of Healy and Fernald. Doll and Longwell (149) show the gross impairments of behavior following cerebral birth lesions.

In 1936 *The March of Time* devoted a part of a program to the general problem of juvenile delinquency. This picture, which is distributed currently by the National Probation Association (39), begins with a few scenes and a brief preamble about the 1935 meeting of the Association. The film then proceeds to take up in story form the development of a delinquent from his boyhood in a tenement to a finale behind prison bars. A silent motion picture showing the work of the Judge Baker Guidance Center has been produced under the direction of Seabury (270). The picture portrays the problems of 4 twelve-year-old youngsters and their solution after months of treatment. The 4 situations represented in the picture are a conduct problem, a vocational problem, a personality problem, and a family conflict problem.

The various facial spasms, grimaces, and uncoordinated reactions of stutterers during their attempts to speak are portrayed in a film by Travis (298).

The history of ethyl alcohol in its relation to human behavior is

traced in a talking picture which was sponsored by the Women's Christian Temperance Union (10). The scientific discovery of alcohol is reenacted in the initial scenes of the film while some effects of alcohol upon health and behavior are set forth quite objectively in the final sequences of the picture. Miles (248) shows the influence of ethyl alcohol and other drugs upon the maze behavior of the rat. The smooth running of a well trained animal on an elevated maze is disturbed markedly by an intraperitoneal injection of alcohol. Liddell (233) compares the maze reactions of normal and thyroidectomized sheep, and Spragg (288) exhibits some behavioral consequences of morphine addiction in chimpanzee.

The major phenomena of hypnosis are illustrated in a film prepared by Beck (89). A young woman is hypnotized by repeated verbal suggestions of sleep. Demonstrations in the film include arm and eye catalepsy, analgesia, blindness, abnormal gustatory and thermal illusions, awakening from the trance, execution of 2 post-hypnotic suggestions and resumption of the trance state at a given signal. This picture vividly illustrates the extent to which emotional and perceptual behavior can be influenced by verbal commands.

The fraudulent practices of spiritistic mediums are revealed in a picture distributed by Bray Pictures Corporation (80). This picture shows how letter writing by spirits is faked, how mind reading by a medium is accomplished, and how a message, allegedly deciphered through a leather glove, actually is read. The kindred phenomena of legerdemain are shown in a pair of interesting films (42, 43).

NATURALISTIC FILMS OF PLANT AND ANIMAL BEHAVIOR

A large number of films have been prepared which have as their major objective the delineation of typical structure, size, and activity of a species. Since the majority of these naturalistic films are of incidental importance for psychology, they merely are listed below.³

A. Plants (61, 62, 77, 235)

B. Animals

1. Protozoa (2, 78, 156)

2. Coelenterates, echinoderms, annelids, and molluscs (51, 69, 122, 124, 188)

3. Arthropods

Crabs and lobsters (8, 125)

Aphids and flies (4, 11, 29, 40)

³ The list is not exhaustive, although it contains most of the better films in this field. For additional motion pictures of this kind the reader should consult the *Educational Film Catalog* (330) and its *Supplements* (331).

- Ants, bees, and wasps (7, 40, 84, 109)
- Beetles, butterflies, and moths (9, 12, 40, 41, 47, 110, 119, 143)
- Centipedes, scorpions, and spiders (73, 126, 137)
- Miscellaneous insects (64, 117, 136)
- 4. Elasmobranchs, amphibians, and reptiles
 - Sharks, eels, and dog-fish (123)
 - Frogs, toads, and salamanders (22, 116, 140)
 - Lizards and serpents (121, 130, 131, 134, 141, 146)
 - Turtles and alligators (144)
- 5. Birds
 - Aquatic birds (63, 106)
 - Perching birds and birds of prey (6, 27, 32, 82, 138)
 - Miscellaneous birds (127, 145)
- 6. Mammals
 - Duckbills and kangaroos (118, 129)
 - Bats and ant-eaters (107)
 - Rodents (120, 139, 142, 297, 302)
 - Odd-toed hoofed animals and elephants (133)
 - Deer, sheep, and bovines (28, 111, 114, 128)
 - Cats, bears, and dogs (16, 108, 112, 113, 297)
 - Monkeys and apes (46, 50, 53, 55, 79, 105, 132, 135, 262, 322)
 - General (3, 25, 38, 44, 74, 308)

MISCELLANEOUS FILMS

As a pictorial introduction to elementary psychology, Valentine (312) has prepared a picture entitled *A Trip Through a Psychology Laboratory*. Among the demonstrations are tactual localization, mirror drawing, steadiness testing with the Whipple and Miles apparatus, and an infant's reactions to strong odors.

Eastman (21) distributes a motion picture which describes a number of frequency curves and illustrates the application of probability formulae to statistical data.

Yerkes and Stewart (323) present photographic views of the laboratory facilities and the chimpanzee colony of the Yale experiment station at Orange Park, Florida. Among the animal pictures are some of the first baby born in the laboratories and of a mother and her twin infants, which happen to be the only chimpanzee twins on record.

The descent of man and various aspects of primitive cultures are depicted in the motion pictures by Breasted (93), Ditmars (115), Ideal Pictures Corporation (13), Bell and Howell (85), and the U. S. Department of Interior (76).

A SUGGESTED GROUP OF FILMS FOR COURSES IN GENERAL PSYCHOLOGY

Grouped below as a sort of summary are the psychological motion pictures, which, in the writer's judgment, excel in content and

photography. Prospective purchasers of these, or any, psychological films referred to in this review should not rely entirely upon the writer's appraisal, however, but should preview the pictures themselves.

1. Development of Behavior
 - a. Prenatal: Carmichael and Coronios (97); Kuo and Carmichael (210)
 - b. Infant: Bayley and Jones (87); Gesell (174, 177, 178, 179, 182); McGraw (236); Sherman (273); Valentine (303)
2. Response Mechanism
 - a. Receptors: Gaumont-British (81); Lemon *et al.* (212, 213); Valentine (310)
 - b. Nervous System: Gerard (171)
 - c. Levels of Response: Bergman and Pike (92); Freeman (168)
3. Learning
 - a. Conditioning: Pavlov (260, reel 3); Culler (102); Zener (324); Kantrow (199)
 - b. Discrimination Apparatus: Maier and Crudden (241); Nissen and McCulloch (258); Smith (285)
 - c. Mazes: Maier (239, 240); Miles (250); Spragg and Nissen (289)
 - d. Puzzle Boxes: Horton and Guthrie (191)
 - e. Tools: Kellogg and Kellogg (201, 202); Crawford and Nissen (100); Jackson (193); Wolfe (321); Klüver (209); McGraw (236, reels 7 and 8); Lewin (225)
4. Perception
 - a. Range: Metfessel and Warren (246); Ford (166)
 - b. Phi Phenomenon: Ruckmick and Greenwald (264)
 - c. Depth Perception: Kinsey (205); Stanton (290)
5. Emotion
 - a. Physiological Aspects: Valentine and Stanton (314)
 - b. Expression in Hands: Wessell and Carmichael (319)
 - c. In Children: Watson (318); Lewin (214)
6. Action
 - a. Reaction Time: Ford (163); Tiffin (294); Miles (251)
7. Personality and Applied Aspects
 - a. Measurement: Freeman (169)
 - b. Salesmanship: Louchs and Norling (5)
8. Behavior Aberrations
 - a. Amentia: University of Minnesota (71); Doll and Longwell (147)
 - b. Delinquency: National Probation Association (39); Seabury and Spokesfield (270)
 - c. Hypnosis: Beck (89)
 - d. Drugs and Maze Behavior: Miles (248)

BIBLIOGRAPHY

(a) Films⁴

1. ALLEN, R. D., *Guidance in Public Schools*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 800 ft., sound, \$85 sale, \$7 rental.
2. ANONYMOUS, *Amoeba*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 307 ft., sound, rental and sale prices on request.
3. ANONYMOUS, *Animals in the Zoo*. New York: Erpi Picture Consultants, 250 W. 57th St., 1933. 400 ft., sound, \$50 sale.
4. ANONYMOUS, *Aphids*. New York: Erpi Picture Consultants, 250 W. 57th St., 1933. 400 ft., sound, \$50 sale.
5. ANONYMOUS, *The Art of Selling*. New York: Louchs & Norling Studios, 245 W. 55th St., 193?. 1,600 ft., sound, \$25 rental.
6. ANONYMOUS, *Baby on the Rocks*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 348 ft., sound, rental and sale prices on request.
7. ANONYMOUS, *Battle of the Centuries*. Chicago: Bell & Howell Co., 1801 Larchmont Ave., 193?. 360 ft., sound, \$1.50 rental.
8. ANONYMOUS, *Beach and Sea Animals*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
9. ANONYMOUS, *Beetles*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale.
10. ANONYMOUS, *The Beneficent Reprobate*. Chicago: Burton Holmes, 1815 Orchard St., 1935. 1,600 ft., sound, loaned free.
11. ANONYMOUS, *Blowfly*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 1935. 621 ft., sound, rental and sale prices on request.
12. ANONYMOUS, *Butterflies*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
13. ANONYMOUS, *Cosmic Drama (Evolution)*. Chicago: Ideal Pictures Corp., 28 E. 8th St., 193?. 1,200 ft., sound, \$4.50 rental.
14. ANONYMOUS, *Dan's Decision*. Chicago: American Osteopathic Assoc., 1929. 800 ft., silent, loaned free.
15. ANONYMOUS, *Development of a Bird Embryo*. Rochester: Eastman Kodak Co., 193?. 400 ft., silent, \$24 sale.
16. ANONYMOUS, *Do Dogs Reason?* New York: Bray Pictures Corp., 727 7th Ave., 193?. 97 ft., silent, \$6.78 sale, \$1 rental.
17. ANONYMOUS, *Engineering the Sound Film*. New York: Western Electric Co., 195 Broadway, 1930. 400 ft., sound, loaned free.
18. ANONYMOUS, *Eyesight*. New York: Edited Pictures System, 330 W. 42nd St., 1928. 400 ft., silent, \$24 sale, \$1.50 rental.

⁴ Many films may be obtained from state departments of visual instruction as well as from the national libraries listed in this review.

In all instances film lengths are given in feet, from which the projection time may be estimated by knowing that 100 feet of silent film at normal speed runs approximately 4 minutes while the same amount of sound film requires slightly less than 3 minutes. Because 16 mm. sound film has perforations only on one side, it cannot be used in a standard silent projector.

19. ANONYMOUS, *Fear*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 80 ft., silent, \$1 rental.
20. ANONYMOUS, *Finding His Voice*. New York: Western Electric Co., 195 Broadway, 1929. 500 ft., sound, \$25 sale, loaned free.
21. ANONYMOUS, *Frequency Curves*. Rochester: Eastman Kodak Co., 1929. 200 ft., silent, \$12 sale.
22. ANONYMOUS, *The Frog*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
23. ANONYMOUS, *Fun in Feet*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 100 ft., silent, \$7.06 sale, \$1 rental.
24. ANONYMOUS, *Garden of Childhood*. Boston: John Hancock Mutual Life Insurance Co., 1930. 400 ft., silent, loaned free.
25. ANONYMOUS, *Hands versus Feet*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 295 ft., silent, \$20.64 sale, \$2 rental.
26. ANONYMOUS, *Heredity*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway. In preparation.
27. ANONYMOUS, *Home from the South*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 341 ft., sound, rental and sale prices on request.
28. ANONYMOUS, *Horse in Motion*. Washington: U. S. Dept. Agric., 1922. 400 ft., silent, loaned free.
29. ANONYMOUS, *The House Fly*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale.
30. ANONYMOUS, *How Animated Cartoons Are Made*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 269 ft., silent, \$18.82 sale, \$1.50 rental.
31. ANONYMOUS, *How Movies Move*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 164 ft., silent, \$11.48 sale, \$1 rental.
32. ANONYMOUS, *How Nature Protects Animals*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
33. ANONYMOUS, *How Talkies Talk*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 1931. 433 ft., sound, rental, and sale prices on request.
34. ANONYMOUS, *How's Your Eyesight?* New York: Bray Pictures Corp., 727 7th Ave., 193?. 168 ft., silent, \$11.79 sale, \$1 rental.
35. ANONYMOUS, *How We Hear*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 126 ft., silent, \$8.82 sale, \$1 rental.
36. ANONYMOUS, *How You See*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 146 ft., silent, \$10.28 sale, \$1 rental.
37. ANONYMOUS, *Human Voice*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 236 ft., silent, \$16.52 sale, \$1.50 rental.
38. ANONYMOUS, *Jungle Giants*. Chicago: Bell & Howell Co., 1801 Larchmont Ave., 1934. 400 ft., sound, \$1.50 rental.
39. ANONYMOUS, *Juvenile Delinquency*. New York: National Probation Assoc., 50 W. 50th St., 1936. 300 ft., sound, \$12 sale.
40. ANONYMOUS, *Killers*. Chicago: Bell & Howell Co., 1801 Larchmont Ave., 193?. 400 ft., sound, \$1.50 rental.

41. ANONYMOUS, *Looper Caterpillars*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 396 ft., sound, rental and sale prices on request.
42. ANONYMOUS, *Magic for Home Use*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 443 ft., silent, \$31 sale, \$2 rental.
43. ANONYMOUS, *Magic versus Science*. Schenectady: General Electric Co., 1933. 400 ft., sound, loaned free.
44. ANONYMOUS, *Man*. New York: Edited Pictures System, 330 W. 42nd St., 1928. 400 ft., silent, \$24 sale, \$1.50 rental.
45. ANONYMOUS, *Mental Tests for Young Babies*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 33 ft., silent, \$1 rental.
46. ANONYMOUS, *Monkeys and Apes*. Rochester: Eastman Kodak Co., 193?. 200 ft., silent, \$12 sale.
47. ANONYMOUS, *Moths*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
48. ANONYMOUS, *Muscles*. Rochester: Eastman Kodak Co., 1931. 400 ft., silent, \$24 sale.
49. ANONYMOUS, *Muscles of Expression*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 95 ft., silent, \$6.66 sale, \$1 rental.
50. ANONYMOUS, *Nearest to Man (Primates)*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 99 ft., silent, \$6.92 sale, \$1 rental.
51. ANONYMOUS, *Obelia*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 1936. 278 ft., sound, rental and sale prices on request.
52. ANONYMOUS, *Optical Instruments*. Rochester: Eastman Kodak Co., 1931. 400 ft., silent, \$24 sale.
53. ANONYMOUS, *The Orang's Kindergarten*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 132 ft., silent, \$9.24 sale, \$1 rental.
54. ANONYMOUS, *Origin of Motion Pictures and Photography*. New York: W. O. Gutlohn, Inc., 35 W. 45th St., 1937. 400 ft., sound, \$50 sale, rental price on request.
55. ANONYMOUS, *Our Noble Ancestor (Ape)*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 180 ft., silent, \$12.63 sale, \$1 rental.
56. ANONYMOUS, *Out of the Silence*. New York: Western Electric Co., 195 Broadway, 1932. 400 ft., sound, \$25 sale, loaned free.
57. ANONYMOUS, *Out Where the Sound Begins*. New York: Western Electric Co., 195 Broadway, 1930. 500 ft., sound, \$25 sale, loaned free.
58. ANONYMOUS, *Ovulation, Fertilization and Early Development of the Mammalian Egg*. Washington: U. S. Dept. Agric., 1935. 800 ft., silent, loaned free.
59. ANONYMOUS, *People Born in January, February, March, April, May, June, July, August, September, October, November, December (12 reels)*. New York: Fitzpatrick Pictures, Inc., 729 7th Ave., 1936. Each reel 400 ft., sound, per reel \$21 sale, \$1.50 rental.
60. ANONYMOUS, *Photography*. New York: W. O. Gutlohn, Inc., 32 W. 45th St., 1937. 400 ft., sound, \$50 sale, rental price on request.
61. ANONYMOUS, *Plant Life*. Chicago: Bell & Howell Co., 1801 Larchmont Ave., 193?. 400 ft., sound, \$1.50 rental.

62. ANONYMOUS, *Plant Traps*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale.
63. ANONYMOUS, *The Plover*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 341 ft., sound, rental and sale prices on request.
64. ANONYMOUS, *Pond Insects*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale.
65. ANONYMOUS, *The Problem of Fatigue*. New York: Amkino Libraries, 1930. 2,400 ft., silent, rental and sale prices on request.
66. ANONYMOUS, *Remarkable Hands*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 381 ft., silent, \$26.66 sale, \$2 rental.
67. ANONYMOUS, *Reproduction in Plants and Lower Animals*. Chicago: Bell & Howell Co., 1801 Larchmont Ave., 193?. 400 ft., silent, \$1 rental.
68. ANONYMOUS, *Reproduction in Lower and Higher Forms*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 800 ft., silent, \$4 rental.
69. ANONYMOUS, *Sea Urchin*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 1936. 406 ft., sound, rental and sale prices on request.
70. ANONYMOUS, *Secrets of the Soul*. New York: G. Schneider, 178 E. 95th St., 193?. 2,400 ft., silent, rental and sale prices on request.
71. ANONYMOUS, *Some Aspects of Feeble-mindedness*. Minneapolis: Visual Education Department, The University of Minnesota, 1935. 2,000 ft., silent, rental and sale prices on request.
72. ANONYMOUS, *Sound Waves*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 102 ft., silent, \$7.11 sale, \$1 rental.
73. ANONYMOUS, *Spiders*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
74. ANONYMOUS, *Studies in Animal Motion*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 324 ft., silent, \$22.01 sale, \$2 rental.
75. ANONYMOUS, *Teaching with Sound Films*. New York: Erpi Picture Consultants, 250 W. 57th St., 1936. 400 ft., sound, \$50 sale, \$3.50 rental.
76. ANONYMOUS, *Temples and Peace*. Washington: U. S. Dept. Int., 1937. 600 ft., sound, loaned free.
77. ANONYMOUS, *Time-Lapse Studies of Plant Growth*. Washington: Office of Motion Pictures, 1933. 400 ft., silent, loaned free.
78. ANONYMOUS, *Tiny Water Animals*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
79. ANONYMOUS, *Toto at Dinner (Chimpanzee)*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 100 ft., silent, \$7 sale, \$1 rental.
80. ANONYMOUS, *Unmasking the Mediums*. New York: Bray Pictures Corp., 727 7th Ave., 193?. 492 ft., silent, \$34.47 sale, \$2 rental.
81. ANONYMOUS, *Vision*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 396 ft., sound, rental and sale prices on request.
82. ANONYMOUS, *We Are Seven*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 320 ft., sound, rental and sale prices on request.

83. ANONYMOUS, *What About Jobs?* Pasadena, Cal.: Educational Research Assoc., 387 Pulmosa Drive, 1936. 800 ft., silent, \$60 sale.
84. ANONYMOUS, *The Wood Ant.* New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 193?. 396 ft., sound, rental and sale prices on request.
85. ANONYMOUS, *World a Million Years Ago.* Chicago: Bell & Howell Co., 1801 Larchmont Ave., 193?. 400 ft., silent, \$1 rental.
86. ANONYMOUS, *Your Stars for 1935.* New York: Educational Pictures, 1935. 800 ft., silent, rental and sale prices on request.
87. BAYLEY, N., and JONES, H. E., *Case 75 (1 to 12 months).* Berkeley: University of California, 1935. 400 ft., silent, \$30 sale, \$2 rental. (*Psychol. Abst.*, 1937, 11, 1996.)
88. BAYLEY, N., and JONES, H. E., *The Development of Locomotion.* Berkeley: University of California, 1931. 400 ft., silent, \$30 sale, \$2 rental. (*Psychol. Abst.*, 1937, 11, 1995.)
89. BECK, L. F., *Hypnosis.* Eugene: University of Oregon, 1937. 375 ft., silent, \$20 sale, \$2 rental. (*Psychol. Abst.*, 1937, 11, 5635.)
90. BECK, L. F., *The Measurement of Visual Apprehension.* Eugene: University of Oregon, 1935. 200 ft., silent, \$14 sale.
91. BERGMAN, L., *Making a Medical Motion Picture.* Brooklyn: 2029 86th St. 400 ft., silent. In preparation.
92. BERGMAN, L., and PIKE, F. H., *Reflexes: Spinal, Decerebrate and Normal.* Brooklyn: 2029 86th St., 1932. 252 ft., silent, \$25 sale, \$5 rental. (*Psychol. Abst.*, 1937, 11, 4507.)
93. BREASTED, C., *The Human Adventure.* New York: W. G. Shields, c/o Lloyds Film Storage Corp., 729 7th Ave., 193?. 2,600 ft., sound, \$250 sale, \$25 rental.
94. BUEHLER, C., *Stages of Child Growth.* New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 800 ft., sound, \$85 sale, \$7 rental. (BUEHLER, C., *The First Year of Life.* New York: John Day Co., 1930. Pp. x+281. BUEHLER, C., and HETZER, H., *Testing Children's Development from Birth to School Age.* New York: Farrar & Rinehart, 1935. Pp. 191.)
95. BURBRIDGE, B., and YERKES, R. M., *Behavioral Experiments with Congo, a Young Mountain Gorilla.* New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1926-1928. 393 ft., silent, \$22.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3632. YERKES, R. M., *The Mind of a Gorilla. Part III. Memory.* *Comp. Psychol. Monog.*, 1928, 5, No. 24. Pp. 92.)
96. BUSWELL, G. T., *Individual Differences in Arithmetic.* New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 800 ft., sound, \$85 sale, \$7 rental.
97. CARMICHAEL, L., and CORONIOS, J. D., *Behavior Inventory of the Fetal Guinea Pig.* Rochester: University of Rochester, 1934. 400 ft., silent, \$20 sale. (*Psychol. Abst.*, 1935, 9, 5623. CARMICHAEL, L., *An Experimental Study in the Prenatal Guinea Pig of the Origin and Development of Reflexes and Patterns of Behavior in Relation to the Stimulation of Specific Receptor Areas During the Period of Active Fetal Life.* *Genet. Psychol. Monog.*, 1934, 16, 338-491.)

98. CARMICHAEL, L., and SMITH, S. M., *Response of the Fetal Guinea Pig to Pressure Stimulation*. Rochester: University of Rochester, 1937. 200 ft., silent, \$12.50 sale. (*Psychol. Abst.*, 1937, 11, 6012.)
99. CORONIOS, J. D., SCHLOSBERG, H., and CARMICHAEL, L., *Prenatal Development of Behavior in the Cat*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 380 ft., silent, \$34.30 sale. Also distributed from Rochester: University of Rochester, sale price on request. (*Psychol. Abst.*, 1935, 9, 5624. CORONIOS, J. D., Development of Behavior in the Fetal Cat. *Genet. Psychol. Monog.*, 1933, 14, 283-386.)
- ✓ 100. CRAWFORD, M. P., and NISSEN, H. W., *Gestures Used by Chimpanzees in Cooperative Problem Solving*. New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1936. 300 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3800. CRAWFORD, M. P., The Cooperative Solving of Problems by Young Chimpanzees. *Comp. Psychol. Monog.*, 1937, 14, No. 68. Pp. 88.)
101. CRUIKSHANK, R. M., *Perceptual Size-Constancy in Infancy*. Baltimore: Goucher College, 1937. 100 ft., silent, sale and rental prices on request.
- ✓ 102. CULLER, E. A., *Motor Conditioning in Dogs*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1934. 189 ft., silent, \$17 sale. (*Psychol. Abst.*, 1937, 11, 4050.)
103. CULLER, E. A., *Views of a Decorticate Dog*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1934. 207 ft., silent, \$18.70 sale. (*Psychol. Abst.*, 1937, 11, 3980.)
- ✓ 104. DALLENBACH, K. M., *Eminent Psychologists*. Ithaca: Cornell University, 1927-1937. 800 ft., silent, \$40 sale.
105. DITMARS, R. L., *The Anthropoid Apes*.⁶ New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
106. DITMARS, R. L., *Aquatic Birds*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
107. DITMARS, R. L., *Bats, Insectivores and Edentates*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
108. DITMARS, R. L., *The Bears*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
109. DITMARS, R. L., *Bees, Wasps, Ants and Allies*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
110. DITMARS, R. L., *Beetles, Butterflies and Moths*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
111. DITMARS, R. L., *Bovines, Sheep, Goats and Antelopes*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
112. DITMARS, R. L., *Canines and Smaller Carnivores*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
113. DITMARS, R. L., *Cat Animals*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
114. DITMARS, R. L., *Deer*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.

⁶ The 42 Ditmars films were produced during the decade, 1925-1935.

115. DITMARS, R. L., *Evolution*. New York: Garrison Film Dist., Inc., 729 7th Ave. 1,200 ft., sound, \$150 sale, rental price on request.
116. DITMARS, R. L., *Frogs and Toads*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
117. DITMARS, R. L., *Insects That Sing; Forms of Mimicry*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
118. DITMARS, R. L., *Kangaroos and Opossums*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
119. DITMARS, R. L., *The Larger Moths*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
120. DITMARS, R. L., *The Larger Rodents*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
121. DITMARS, R. L., *The Larger Serpents*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
122. DITMARS, R. L., *Marine Life: Series A*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
123. DITMARS, R. L., *Marine Life: Series B*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
124. DITMARS, R. L., *Marine Life: Series C*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
125. DITMARS, R. L., *Marine Life: Series D*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
126. DITMARS, R. L., *Millipedes, Centipedes, Scorpions and Tropical Spiders*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
127. DITMARS, R. L., *Miscellaneous Birds*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
128. DITMARS, R. L., *Miscellaneous Hoofed Animals*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
129. DITMARS, R. L., *Miscellaneous Marsupials and Egg-Laying Mammals*. New York: Instructional Films Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
130. DITMARS, R. L., *New and Old World Harmless Serpents*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
131. DITMARS, R. L., *New World Lizards*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
132. DITMARS, R. L., *New World Monkeys*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
133. DITMARS, R. L., *Odd-Toed Hoofed Animals and the Elephants*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
134. DITMARS, R. L., *Old World Lizards*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
135. DITMARS, R. L., *Old World Monkeys*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.

136. DITMARS, R. L., *Outlines of Insects: Life Histories*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
137. DITMARS, R. L., *North American Spider*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
138. DITMARS, R. L., *Perching Birds and Birds of Prey*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
139. DITMARS, R. L., *The Prairie "Dog" and the Beaver*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
140. DITMARS, R. L., *Salamanders, Newts and Allies*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
141. DITMARS, R. L., *The Short-Fanged Poisonous Serpents*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
142. DITMARS, R. L., *The Smaller Rodents*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
143. DITMARS, R. L., *Transformations of Butterflies and Moths*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
144. DITMARS, R. L., *Turtles and Tortoises; Alligators and Crocodiles*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
145. DITMARS, R. L., *Various Orders and Wingless Birds*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
146. DITMARS, R. L., *The Viperine Serpents*. New York: Instructional Films, Inc., 30 Rockefeller Plaza. 400 ft., silent, \$25 sale, \$1.50 rental.
147. DOLL, E. A., and LONGWELL, S. G., *Genetic Development of Children with Cerebral Birth Lesions*. Vineland, N. J.: The Vineland Training School, 1934. 450 ft., silent, \$50 sale, \$5 rental. (*Psychol. Abst.*, 1935, 9, 3305.)
148. DOLL, E. A., and LONGWELL, S. G., *Institutional Care of the Feeble-minded*. Vineland, N. J.: The Vineland Training School, 1934. 400 ft., silent, \$50 sale, \$5 rental. (*Psychol. Abst.*, 1935, 9, 3306.)
149. DOLL, E. A., and LONGWELL, S. G., *Mental Deficiency Due to Birth Injury: Spastic and Athetoid Types*. Vineland, N. J.: The Vineland Training School, 1934. 400 ft., silent, \$50 sale, \$5 rental. (*Psychol. Abst.*, 1935, 9, 3307.)
150. DOLL, E. A., and LONGWELL, S. G., *Physical Handicaps Associated with Intracranial Birth Lesions*. Vineland, N. J.: The Vineland Training School, 1934. 400 ft., silent, \$50 sale, \$5 rental. (*Psychol. Abst.*, 1935, 9, 3308.)
151. DOLL, E. A., and LONGWELL, S. G., *The Research Laboratory: The Training School at Vineland, N. J.* Vineland, N. J.: The Vineland Training School, 1934. 350 ft., silent, \$50 sale, \$5 rental. (*Psychol. Abst.*, 1935, 9, 3309.)

152. DRAKE, C. A., *Aptitude Tests for Industrial Employees*. New York: 222 W. 23rd St., 1937. 347 ft., silent, rental and sale prices on request.
153. EDGERTON, H. E., *Edgerton High-Speed Photography*. Boston: Mass. Inst. Tech., 1933. 500 ft., silent, loaned free.
154. FIRESTONE, M. B., and FIRESTONE, F. A., *A Day in the Nursery School*. Ann Arbor: University of Michigan, 1936. 700 ft., silent, loaned free.
155. FORD, A., *Behavior of the Feeble-minded*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 267 ft., silent, \$24 sale. (*Psychol. Abst.*, 1937, 11, 4144. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 233-234.)
156. FORD, A., *The Behavior of Unicellular Animals*. Bethlehem, Pa.: Lehigh University, 1932. 250 ft., silent, \$15 sale. (FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 45-46.)
157. FORD, A., *Conditioned Responses*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1931. 250 ft., silent, \$16.70 sale. (*Psychol. Abst.*, 1935, 9, 3637. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 95-96.)
158. FORD, A., *Illusions of Movement*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1931. 50 ft., silent, \$3.35 sale. (*Psychol. Abst.*, 1937, 11, 4009. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 199-200.)
159. FORD, A., *Industrial Motion Analysis*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1929. 260 ft., silent, \$16.65 sale. (*Psychol. Abst.*, 1937, 11, 4295. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 237-240.)
160. FORD, A., *Motor Aptitude*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1930. 216 ft., silent, \$13.35 sale. (*Psychol. Abst.*, 1937, 11, 4087. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 213-214.)
161. FORD, A., *The Nerve Impulse*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 210 ft., silent, \$13.40 sale. (*Psychol. Abst.*, 1935, 9, 3610. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 49-51.)
162. FORD, A., *The Pecking Instinct in Chicks*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1929. 118 ft., silent, \$8.35 sale. (*Psychol. Abst.*, 1937, 11, No. 4085. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 61-63.)
163. FORD, A., *Reaction Time*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 420 ft., silent, \$27.80 sale. (*Psychol. Abst.*, 1935, 9, 3638. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 99-101.)
164. FORD, A., *Rote Learning*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1931. 51 ft., silent, \$3.35 sale. (*Psychol. Abst.*, 1937, 11, 4052. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Cf. pp. 137-152.)
165. FORD, A., *Stimulation of the Semicircular Canals*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1929. 34 ft., silent, \$2.80 sale. (*Psychol. Abst.*, 1937, 11, 4086. FORD, A., *Group Experiments in Ele-*

- mentary Psychology. New York: The Macmillan Co., 1931. .Cf. pp. 89-91.)
166. FORD, A., *Tachistoscopic Perception*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 100 ft., silent, \$6.70 sale. (*Psychol. Abst.*, 1935, 9, 3561.)
 167. FORSTER, M. C., and NISSEN, H. W., *The Measurement of Reaction-Time in Chimpanzees*. New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1934. 280 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3669. FORSTER, M. C., Temporal Relations of Behavior in Chimpanzees and Man as Measured by Reaction Time. *J. Comp. Psychol.*, 1935, 20, 361-383.)
 168. FREEMAN, G. L., *The Human Mechanism. I, II, III*. Evanston: Northwestern University, 1936. 1,200 ft., silent, rental and sale prices on request.
 169. FREEMAN, G. L., *The Measurement of Personality*. Evanston: Northwestern University, 1936. 500 ft., sound, rental and sale prices on request.
 170. GATES, A. I., *The Teaching of Reading*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 800 ft., sound, \$85 sale, \$7 rental.
 171. GERARD, R. W., *The Nervous System*. New York: Erpi Picture Consultants, 250 W. 57th St., 1937. 400 ft., sound, \$50 sale. (*Psychol. Abst.*, 1937, 11, 4443. BECK, L. F., A Film of the Nervous System. *Amer. J. Psychol.*, 1938, 51, 167-168.)
 172. GESELL, A., *A Baby's Day at 12 Weeks*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3486. GESELL, A., *An Atlas of Infant Behavior*. Vol. II. New Haven: Yale University Press, 1934. Pp. 525-922.)
 173. GESELL, A., *A Behavior Day at 48 Weeks*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3488. GESELL, A., *An Atlas of Infant Behavior*. Vol. II. New Haven: Yale University Press, 1934. Pp. 525-922.)
 174. GESELL, A., *Behavior Patterns at One Year*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3489. GESELL, A., *An Atlas of Infant Behavior*. Vol. II. New Haven: Yale University Press, 1934. Pp. 525-922.)
 175. GESELL, A., *A Behavior Study of Cerebral Birth Injury*. New Haven: Yale Clinic of Child Development. 161 ft., silent. In preparation. (GESELL, A., Motor Disability and Mental Growth: The Psychological Effects of a Cerebral Birth Palsy. *Psychol. Rec.*, 1937, 1, 87-94.)
 176. GESELL, A., *Early Social Behavior*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3491. GESELL, A., *An Atlas of Infant Behavior*. Vol. II. New Haven: Yale University Press, 1934. Pp. 525-922.)
 177. GESELL, A., *From Creeping to Walking*. New York: Erpi Picture Consultants, 250 W. 57th St., 1934. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3485. GESELL, A., *An Atlas of Infant Behavior*. Vol. I. New Haven: Yale University Press, 1934. Pp. 1-524. GESELL, A., and THOMPSON, H., *Infant Behavior*. New York: McGraw-Hill Book Co., 1934. Pp. 343.)

178. GESELL, A., *The Growth of Infant Behavior: Early Stages*. New York: Erpi Picture Consultants, 250 W. 57th St., 1934. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3482. GESELL, A., *An Atlas of Infant Behavior*. Vol. I. New Haven: Yale University Press, 1934. Pp. 1-524. GESELL, A., and THOMPSON, H., *Infant Behavior*. New York: McGraw-Hill Book Co., 1934. Pp. 343.)
179. GESELL, A., *The Growth of Infant Behavior: Later Stages*. New York: Erpi Picture Consultants, 250 W. 57th St., 1934. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3483. GESELL, A., *An Atlas of Infant Behavior*. Vol. I. New Haven: Yale University Press, 1934. Pp. 1-524. GESELL, A., and THOMPSON, H., *Infant Behavior*. New York: McGraw-Hill Book Co., 1934. Pp. 343.)
180. GESELL, A., *Learning and Growth*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3490. GESELL, A., *An Atlas of Infant Behavior*. Vol. I. New Haven: Yale University Press, 1934. Pp. 1-524. GESELL, A., and THOMPSON, H., *Infant Behavior*. New York: McGraw-Hill Book Co., 1934. Pp. 343.)
181. GESELL, A., *Life Begins*. New York: Erpi Picture Consultants, 250 W. 57th St., 1934-1935. 2,000 ft., sound, \$25 rental. (GESELL, A., *An Atlas of Infant Behavior*. Vols. I and II. New Haven: Yale University Press, 1934. Pp. 1-524; 525-922.)
182. GESELL, A., *Posture and Locomotion*. New York: Erpi Picture Consultants, 250 W. 57th St., 1934. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3484. GESELL, A., *An Atlas of Infant Behavior*. Vol. I. New Haven: Yale University Press, 1934. Pp. 1-524. GESELL, A., and THOMPSON, H., *Infant Behavior*. New York: McGraw-Hill Book Co., 1934. Pp. 343.)
183. GESELL, A., *The Study of Infant Behavior*. New York: Erpi Picture Consultants, 250 W. 57th St., 1930. 800 ft., sound, \$85 sale, \$7 rental. (*Psychol. Abst.*, 1935, 9, 3481. GESELL, A., *An Atlas of Infant Behavior*. Vols. I and II. New Haven: Yale University Press, 1934. Pp. 1-524; 525-922. GESELL, A., and THOMPSON, H., *Infant Behavior*. New York: McGraw-Hill Book Co., 1934. Pp. 343.)
184. GESELL, A., *A Thirty-Six Weeks Behavior Day*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale, \$3.50 rental. (*Psychol. Abst.*, 1935, 9, 3487. GESELL, A., *An Atlas of Infant Behavior*. Vol. II. New Haven: Yale University Press, 1934. Pp. 525-922.)
185. GESELL, A., and AMATRUDA, C. S., *The Influence of Thyroid on the Growth of Infant Behavior in Cretinism*. New Haven: Yale Clinic of Child Development. 359 ft., silent. In preparation.
186. GESELL, A., and HALVERSON, H. M., *Thumb Opposition*. New Haven: Yale Clinic of Child Development. 100 ft., silent. In preparation.
187. GRUENBERG, B. C., *Eyesight*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1924. 350 ft., silent, \$24 sale.
188. HEWER, H. R., and HUXLEY, J. S., *The Earthworm*. New York: Gaumont-British Picture Corp. Amer., 1600 Broadway, 1936. 652 ft., sound, rental and sale prices on request.
189. HILDRETH, G., and KATZ, E., *Psychological Testing at Lincoln School*. New York: Lincoln School, 1935. 600 ft., silent, loaned free.

190. HILL, D. B., *Life of a Healthy Child*. Salem, Oregon: Author, 1936. 450 ft., silent, \$28 sale.
191. HORTON, G. P., and GUTHRIE, E. R., *Cats in a Puzzle Box*. Seattle: University of Washington, 1937. 400 ft., silent, sale price on request.
192. HUNT, W. A., and LANDIS, C., *The Startle Pattern*. New London: Connecticut College, 1936. 250 ft., silent, \$15 sale. (*Psychol. Abst.*, 1936, 10, 5656. HUNT, W. A., Studies of the Startle Pattern. II. Bodily Pattern. *J. Psychol.*, 1936, 2, 207-213.)
193. JACKSON, T. A., *The Use of Tools by the Chimpanzee in Problem Solution*. New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1934. 332 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3641.)
194. JACKSON, T. A., and WARDEN, C. J., *Behavior of the Rhesus Monkey in Typical Experimental Situations*. New York: Columbia University, 1932. 200 ft., silent, rental and sale prices on request.
195. JACKSON, T. A., and WARDEN, C. J., *Behavior of the White Rat in Typical Experimental Situations*. New York: Columbia University, 1932. 350 ft., silent, rental and sale prices on request.
196. JONES, H. E., *A Day at the Nursery School*. Berkeley: University of California, 1931. 400 ft., silent, \$30 sale, \$2 rental. (*Psychol. Abst.*, 1937, 11, 2010.)
197. JONES, H. E., *Experimental Studies of the Learning Process in Children*. Berkeley: University of California, 1936. 400 ft., silent, \$30 sale, \$2 rental. (*Psychol. Abst.*, 1937, 11, 1715.)
198. JONES, H. E., *Tests of Motor Functions*. Berkeley: University of California, 1936. 400 ft., silent, \$30 sale, \$2 rental. (*Psychol. Abst.*, 1937, 11, 2011.)
199. KANTROW, R. W., *Conditioning in Young Infants*. Iowa City: Iowa Child Welfare Research Station, 1936. 200 ft., silent, loaned free. (KANTROW, R. W., An Investigation of Conditioned Feeding Responses and Concomitant Adaptive Behavior in Young Infants. *Univ. Iowa Stud. Child Welfare*, 1937, 13, No. 3. Pp. 64.)
200. KELLOGG, W. N., and KELLOGG, L. A., *Some Behavior Characteristics of a Human and a Chimpanzee Infant in the Same Environment*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 400 ft., silent, \$36.20 sale. (*Psychol. Abst.*, 1936, 10, 1426. KELLOGG, W. N., and KELLOGG, L. A., *The Ape and the Child*. New York: McGraw-Hill Book Co., 1933. Pp. 341.)
201. KELLOGG, W. N., and KELLOGG, L. A., *Comparative Tests on a Human and a Chimpanzee Infant of Approximately the same Age*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 372 ft., silent, \$33.60 sale. (KELLOGG, W. N., and KELLOGG, L. A., *The Ape and the Child*. New York: McGraw-Hill Book Co., 1933. Pp. 341.)
202. KELLOGG, W. N., and KELLOGG, L. A., *Experiments upon a Human and a Chimpanzee Infant after Six Months in the Same Environment*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 378 ft., silent, \$34.20 sale. (KELLOGG, W. N., and KELLOGG, L. A., *The Ape and the Child*. New York: McGraw-Hill Book Co., 1933. Pp. 341.)
203. KELLOGG, W. N., and KELLOGG, L. A., *Some General Reactions of a Human and a Chimpanzee Infant after Six Months in the Same Environment*.

- Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 340 ft., silent, \$31 sale. (KELLOGG, W. N., and KELLOGG, L. A., *The Ape and the Child*. New York: McGraw-Hill Book Co., 1933. Pp. 341.)
204. KILPATRICK, W. H., *Dynamic Learning*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 800 ft., sound, \$85 sale, \$7 rental.
205. KINSEY, D. D., *A Study of Third Dimensional Motion as Affected by Factors of Perspective*. New London: Connecticut College, 1934. 350 ft., silent, rental and sale prices on request.
206. KITSON, H. D., *Choosing Your Vocation*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale.
207. KLÜVER, H., "Psychic Blindness" in the Rhesus Monkey. Chicago: Culver Hall, University of Chicago, 1937. 225 ft., silent, \$15 sale.
208. KLÜVER, H., *Reactions of a Cortically Blind Monkey*. Chicago: Culver Hall, University of Chicago, 1933-1934. 460 ft., silent, \$20 sale. (KLÜVER, H., *An Analysis of the Effects of the Removal of the Occipital Lobes in Monkeys*. *J. Psychol.*, 1936, 2, 49-61.)
209. KLÜVER, H., *Use of Tools by a Cebus Monkey*. Chicago: Culver Hall, University of Chicago, 1931. 443 ft., silent, \$20 sale. (KLÜVER, H., *Behavior Mechanisms in Monkeys*. Chicago: University of Chicago Press, 1933. Pp. xvii+387.)
210. KUO, Z. Y., and CARMICHAEL, L., *The Development of Behavior in the Chick Embryo*. Rochester: University of Rochester, 1937. 420 ft., silent, \$25 sale. (*Psychol. Abst.*, 1937, 11, 6034. KUO, Z. Y., and CARMICHAEL, L., *A Technique for the Motion Picture Recording of the Development of Behavior in the Chick Embryo*. *J. Psychol.*, 1937, 4, 343-348.)
211. LANDIS, C., and HUNT, W. A., *The Startle Pattern in Psychopathological Patients*. New London: Connecticut College, 1937. 250 ft., silent, \$15 sale. (*Psychol. Abst.*, 1937, 11, 2308. LANDIS, C., HUNT, W. A., and PAGE, J. D., *Studies of the Startle Pattern: VII. Abnormals*. *J. Psychol.*, 1937, 4, 199-206.)
212. LEMON, H. B., SCHLESINGER, H. I., FLETCHER, H., and MACKENZIE, D., *Fundamentals of Acoustics*. New York: Erpi Picture Consultants, 250 W. 57th St., 1933. 400 ft., sound, \$50 sale. (*Psychol. Abst.*, 1936, 10, 5632. LEMON, H. B., and SCHLESINGER, H. I., *Sound*. Chicago: University of Chicago Press, 1934. Pp. iv+39.)
213. LEMON, H. B., SCHLESINGER, H. I., FLETCHER, H., and MACKENZIE, D., *Sound Waves and Their Sources*. New York: Erpi Picture Consultants, 250 W. 57th St., 1933. 400 ft., sound, \$50 sale. (*Psychol. Abst.*, 1936, 10, 5633. LEMON, H. B., and SCHLESINGER, H. I., *Sound*. Chicago: University of Chicago Press, 1934. Pp. iv+39.)
214. LEWIN, K., *Anger*. I, II.* Iowa City: State University of Iowa, 1932. 720 ft., silent, \$36 sale, \$9 rental.

* The general theory basic to the Lewin films is discussed in:

Lewin, K., *Principles of Topological Psychology*. New York: McGraw-Hill Book Co., 1936. Pp. xv+231.

Lewin, K., *Dynamic Theory of Personality*. New York: McGraw-Hill Book Co., 1935. Pp. ix+286.

Murchison, C. (Ed.), *Handbook of Child Psychology*. Worcester: Clark University Press, 1933. Pp. 956. Cf. especially pp. 590-625.

215. LEWIN, K., *Babbling*. Iowa City: State University of Iowa, 1932. 240 ft., sound, \$14 sale, \$6 rental.
216. LEWIN, K., *Child with Two Rattles*. Iowa City: State University of Iowa, 1930. 200 ft., silent, \$10 sale, \$4 rental.
217. LEWIN, K., *Conflict Between Mother and Child at Dinner*. Iowa City: State University of Iowa, 1929. 400 ft., silent, \$19 sale, \$5 rental.
218. LEWIN, K., *Conflict Situations in Childhood*. Iowa City: State University of Iowa, 1928. 400 ft., silent, \$19 sale, \$5 rental.
219. LEWIN, K., *Development of Grasping in Different Children*. Iowa City: State University of Iowa, 1931. 400 ft., silent, \$19 sale, \$5 rental.
220. LEWIN, K., *Field Forces as Impediments to a Performance*. Iowa City: State University of Iowa, 1929. 400 ft., silent, \$19 sale, \$5 rental.
221. LEWIN, K., *Levels of Aspiration in Three- and Four-Year-Old Children*. Iowa City: State University of Iowa, 1929. 400 ft., silent, \$19 sale, \$5 rental.
222. LEWIN, K., *Play*. I, II. Iowa City: State University of Iowa, 1930. 640 ft., sound, \$32 sale, \$7 rental.
223. LEWIN, K., *Problem Children Compared with Normal and Feeble-minded Children*. I, II, III, IV. Iowa City: State University of Iowa, 1927. 1,400 ft., silent, \$75 sale, \$20 rental.
224. LEWIN, K., *Psychological Satiation*. I, II, III. Iowa City: State University of Iowa, 1930. 1,160 ft., silent, each part: \$19 sale, \$5 rental.
225. LEWIN, K., *Simple Detour Experiments*. Iowa City: State University of Iowa, 1928. 200 ft., silent, \$10 sale, \$4 rental.
226. LEWIN, K., *Walking Upstairs for the First Time*. Iowa City: State University of Iowa, 1931. 280 ft., silent, \$17 sale, \$5 rental.
227. LEWIN, K., WARING, E., and DEMBO, T., *Cases of Relatively High Pressure in the Dinner Situation*. Iowa City: State University of Iowa, 1935. 200 ft., sound, \$15 sale, \$5 rental.
228. LEWIN, K., WARING, E., and DEMBO, T., *Certain Procedures in Helping the Child to Eat*. Iowa City: State University of Iowa, 1935. 350 ft., sound, \$25 sale, \$7 rental.
229. LEWIN, K., WARING, E., and DEMBO, T., *The Child Eats with Mother*. Iowa City: State University of Iowa, 1935. 350 ft., sound, \$25 sale, \$7 rental.
230. LEWIN, K., WARING, E., and DEMBO, T., *A Child Refuses to Eat with Mother*. Iowa City: State University of Iowa, 1935. 250 ft., sound, \$15 sale, \$6 rental.
231. LEWIN, K., WARING, E., and DEMBO, T., *Eating after Substitute Eating*. Iowa City: State University of Iowa, 1935. 250 ft., sound, \$15 sale, \$6 rental.
232. LEWIN, K., WARING, E., and DEMBO, T., *The Effect of the Distance Between the Child and Adult upon Social Pressure*. Iowa City: State University of Iowa, 1935. 250 ft., sound, \$15 sale, \$6 rental.
233. LIDDELL, H. S., *Maze Reactions of Normal and Thyroidectomized Sheep*. Bethlehem: A. Ford, Lehigh University, 1929. 150 ft., silent, \$9 sale.
234. LIDDELL, H. S., *Conditioned Reflexes in Sheep*. Bethlehem: A. Ford, Lehigh University, 1929. 150 ft., silent, \$9 sale. (LIDDELL, H. S., JAMES, W. T., and ANDERSON, O. D., *The Comparative Physiology of*

- the Conditioned Motor Reflex. *Comp. Psychol. Monog.*, 1934, 11, No. 51. Pp. 89.)
235. LUCE, —, *The Life of Plants*. Washington: U. S. Dept. of Agric., 1936. 800 ft., sound, loaned free.
 236. MCGRAW, M. B., *Development of Reflexive and Adaptive Behavior-Patterns in Infants. (Johnny and Jimmy.)* New York: Normal Child Development Clinic, Columbia Medical Center, 1935. 3,200 ft., silent, \$200 sale. (*Psychol. Abst.*, 1936, 10, 6049. MCGRAW, M. B., *Growth, A Study of Johnny and Jimmy*. New York: D. Appleton-Century Co., 1935. Pp. xxi+319.)
 237. MCGRAW, M. B., and PRICE, E. D., *Plate Glass Test*. New York: Normal Child Development Clinic, Columbia Medical Center, 1936. 450 ft., silent, rental and sale prices on request. (*Psychol. Abst.*, 1937, 11, 518.)
 238. MCGRAW, M. B., and WEINBACH, A. P., *Quantitative Measures of Developmental Processes in Erect Locomotion*. New York: Normal Child Development Clinic, Columbia Medical Center, 1936. 300 ft., silent, rental and sale prices on request. (*Psychol. Abst.*, 1937, 11, 519.)
 239. MAIER, N. R. F., *Brain Lesions and the Behavior of Rats*. Bethlehem: A. Ford, Lehigh University, 1934. 400 ft., silent, \$24 sale.
 240. MAIER, N. R. F., *The Intelligence of White Rats*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1933. 400 ft., silent, \$26.70 sale. (*Psychol. Abst.*, 1935, 9, 3689. METFESSEL, M., *Student's Guide for Demonstrations of Psychological Experiments*. New York: McGraw-Hill Book Co., 1936. Cf. pp. 88; 170-171.)
 241. MAIER, N. R. F., and CRUDDEN, C. H., *A Study of Equivalent and Non-Equivalent Stimuli in the Rat*. Bethlehem: A. Ford, Lehigh University, 1937. 400 ft., silent, \$24 sale.
 242. MEARNs, H., *Creative Approach to Education*. New York: Erpi Picture Consultants, 1931. 800 ft., sound, \$85 sale, \$7 rental.
 243. METFESSEL, M., and HOVEY, H. B., *Reflexes in the Frog*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 212 ft., silent, \$19.70 sale. (*Psychol. Abst.*, 1935, 9, 5017. METFESSEL, M., *Student's Guide for Demonstrations of Psychological Experiments*. New York: McGraw-Hill Book Co., 1936. Cf. pp. 16-17; 163-164.)
 244. METFESSEL, M., and JOEL, W., *Types of Apparent Movement*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 241 ft., silent, \$22.20 sale. (*Psychol. Abst.*, 1935, 9, 4936. METFESSEL, M., *Student's Guide for Demonstrations of Psychological Experiments*. New York: McGraw-Hill Book Co., 1936. Cf. pp. 80-81.)
 245. METFESSEL, M., and MUSGRAVE, H., *Measurement of the Müller-Lyer Illusion*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 47 ft., silent, \$4 sale. (*Psychol. Abst.*, 1935, 9, 4937. METFESSEL, M., *Student's Guide for Demonstrations of Psychological Experiments*. New York: McGraw-Hill Book Co., 1936. Cf. pp. 68-69; 168.)
 246. METFESSEL, M., and WARREN, N., *Range of Visual Perception*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 50 ft., silent, \$4.25 sale. (*Psychol. Abst.*, 1935, 9, 4938. METFESSEL, M., *Student's Guide for*

- Demonstrations of Psychological Experiments.* New York: McGraw-Hill Book Co., 1936. Cf. pp. 61-62.)
247. METFESSEL, M., and WARREN, N., *Reliability of Memory.* Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 40 ft., silent, \$3.45 sale. (*Psychol. Abst.*, 1935, 9, 4960. METFESSEL, M., *Student's Guide for Demonstrations of Psychological Experiments.* New York: McGraw-Hill Book Co., 1936. Cf. pp. 109; 112; 172.)
 248. MILES, W. R., *Influence of Alcohol on the Maze Behavior of Rats.* New Haven: Yale University, 1929. 200 ft., silent, rental and sale prices on request.
 249. MILES, W. R., *Mechanics of Reading in the Blind.* New Haven: Yale University, 1928. 150 ft., silent, rental and sale prices on request.
 250. MILES, W. R., *Psychological Species Differences.* New Haven: Yale University, 1931. 400 ft., silent, rental and sale prices on request. (MILES, W. R., A Midway Maze for Work with Animals. *J. Gener. Psychol.*, 1931, 5, 278-280.)
 251. MILES, W. R., *Reaction Time in Football Charging.* New Haven: Yale University, 1927. 100 ft., silent, rental and sale prices on request. (MILES, W. R., Studies in Physical Exertion. II. Individual and Group Reaction Time in Football Charging. *Res. Quart.*, 1931, 2, 6-13.)
 252. MILES, W. R., *Titchener Film.* New Haven: Yale University, 1927. 100 ft., silent, rental and sale prices on request. (MILES, W. R., Titchener Film. *J. Gener. Psychol.*, 1928, 1, 368.)
 253. MILES, W. R., *Writing Posture and Coördination in the Left-Handed.* New Haven: Yale University, 1928. 200 ft., silent, rental and sale prices on request.
 254. MILLER, J., *Individual Differences Among Children.* Wilkes-Barre, Pa.: Wilkes-Barre City Schools, 1934. 450 ft., silent, rental and sale prices on request.
 255. MITRANO, A. J., *A Demonstrational Film of Apparatus and Procedure Used in the Study of Problems of Human Motivation.* Vineland, N. J.: The Vineland Training School, 1936. 100 ft., silent, sale and rental prices on request.
 256. MUSGRAVE, H., and METFESSEL, M., *Determiners of Attention.* Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1932. 76 ft., silent, \$7.25 sale. (*Psychol. Abst.*, 1935, 9, 4962. METFESSEL, M., *Student's Guide for Demonstrations of Psychological Experiments.* New York: McGraw-Hill Book Co., 1936. Pp. 60-61; 165-167.)
 257. NAVEZ, A. E., *Reactions in Plants and Animals.* New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 400 ft., sound, \$50 sale. (*Psychol. Abst.*, 1936, 10, 5777.)
 258. NISSEN, H. W., and McCULLOCH, T. L., *Discrimination Experiments with Chimpanzee: Lifted Weights and Visual Stimuli.* New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1935. 356 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3618.)
 259. OLSON, W. C., and FIRESTONE, M. B., *The University Elementary School and Child Development Laboratory.* Ann Arbor: University of Michigan, 1934. 700 ft., silent, loaned free.

260. PAVLOV, I. P., *Behavior of Man and Animal or Mechanics of the Brain*. New York: Garrison Film Dist., Inc., 729 7th Ave., 193?. 2,400 ft., silent, \$150 sale, \$15 rental. (*Psychol. Abst.*, 1936, 10, 4955.)
261. PAVLOV, I. P., *Rose and Raphael*. New York: Garrison Film Dist., Inc., 729 7th Ave., 1937. 1,200 ft., sound, \$10 rental.
262. RAVEN, H. C., *Meshie, the Child of a Chimpanzee*. New York: The American Museum of Natural History, 193?. 1,200 ft., silent, rental and sale prices on request.
263. RICHARDS, T. W., and IRWIN, O. C., *Techniques Used in Studying the Plantar Responses of Infants*. Iowa City: Iowa Child Welfare Research Station, 1934. 200 ft., silent, loaned free. (*Psychol. Abst.*, 1937, 11, 3016.)
264. RUCKMICK, C. A., and GREENWALD, D. U., *The Phi Phenomenon*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1935. 230 ft., silent, \$20.70 sale. (*Psychol. Abst.*, 1937, 11, 4041.)
265. RUGH, R., *Ovulation in the Frog*. New York: Instructional Films, Inc., 1936. 400 ft., silent, \$30 sale, \$2.50 rental.
266. RYAN, A. H., *Take It Easy*. Detroit: Dodge Motor Car Corp., 1935. 800 ft., sound, loaned free.
267. SARBIN, T. R., GREEN, E. J., and MECKLER, H. H., *Pecking in Chicks under Different Conditions of Feeding and Light*. Columbus: Ohio State University, 1936. 300 ft., silent, rental and sale prices on request.
268. SARTORIUS, I. C., *A Few Tests of Child Intelligence*. New York: Erpi Picture Consultants, 250 W. 57th St., 1930. 400 ft., sound, \$50 sale, \$7 rental. (*Psychol. Abst.*, 1936, 10, 6020.)
269. SCHLOSBERG, H., CORONIOS, J. D., TRUEBLOOD, C. K., SMITH, K. U., and CARMICHAEL, L., *Behavior Sequences in the Cat*. Rochester: University of Rochester, 1933. 800 ft., silent, \$35 sale. (*Psychol. Abst.*, 1935, 9, 5648. SMITH, K. U., Visual Discrimination in the Cat. I. The Capacity of the Cat for Visual Figure Discrimination. *J. Genet. Psychol.*, 1934, 44, 301-320. TRUEBLOOD, C. K., and SMITH, K. U., Stringpulling Behavior of the Cat. *J. Genet. Psychol.*, 1934, 44, 414-427. CORONIOS, J. D., Development of Behavior in the Fetal Cat. *Genet. Psychol. Monog.*, 1933, 14, 283-286.)
270. SEABURY, M., and SPOKESFIELD, H., *Four Neighbors*. Boston: Judge Baker Guidance Center, 1937. 1,800 ft., silent, no sale, rental \$5 up, depending on size of group and distance from Boston. (*Psychol. Abst.*, 1937, 11, 3494.)
271. SEASHORE, R. H., and MILES, W. R., *The Stanford Motor Skills Unit*. Evanston: Northwestern University, 1928. 110 ft., silent, \$7.70 sale.
272. SHERMAN, M., *The Emotional Development of Infants*. Chicago: The Orthogenic School, 1923-1925. 300 ft., silent, sale price on request. (SHERMAN, M., The Differentiation of Emotional Responses in Infants. *J. Comp. Psychol.*, 1927, 8, 265-284.)
273. SHERMAN, M., *The Inheritance Patterns of Infant Behavior*. Chicago: The Orthogenic School. In preparation.
274. SKOLNICK, A., *Cutaneous Sensibility to Vibratory Stimulus in the White Rat*. Princeton, N. J.: Psychology Department, Princeton University, 1937. 130 ft., silent, sale price on request.

275. SMITH, D. E., *The Play of Imagination in Geometry*. New York: Erpi Picture Consultants, 250 W. 57th St., 1935. 400 ft., sound, \$50 sale, \$3.50 rental.
276. SMITH, F. C., *Artist*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
277. SMITH, F. C., *Doctor*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
278. SMITH, F. C., *Engineer*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
279. SMITH, F. C., *Executive*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
280. SMITH, F. C., *Farmer*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
281. SMITH, F. C., *Industrial Worker*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
282. SMITH, F. C., *Journalist*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
283. SMITH, F. C., *Salesman*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
284. SMITH, F. C., *Skilled Mechanic*. Chicago: H. A. DeVry, 1111 Armitage Ave., 1925. 350 ft., silent, \$24 sale.
285. SMITH, K. U., *Studies in Discriminative Behavior in the Cat*. Rochester: University of Rochester, 1934. 450 ft., silent, \$27.50 sale. (*Psychol. Abst.*, 1935, 9, 5650. SMITH, K. U., Visual Discrimination in the Cat: I. The Capacity of the Cat for Visual Figure Discrimination. II. A Further Study of the Capacity of the Cat for Visual Figure Discrimination. *J. Genet. Psychol.*, 1934, 44, 301-320; 1935, 45, 336-357.)
286. SMITH, K. U., and CARMICHAEL, L., *Postoperative Disturbances of Visually Controlled Behavior in the Cat Following Complete Bilateral Removal of the Visual Cortex*. Rochester: University of Rochester, 1936. 400 ft., silent, \$20 sale. (SMITH, K. U., The Postoperative Effects of Removal of the Striate Cortex upon Certain Unlearned Visually Controlled Reactions in the Cat. *J. Genet. Psychol.*, 1937, 50, 137-156.)
287. SPEIDEL, C. C., *The Growth and Repair of Nerves*. University: University of Virginia Medical School, 1932. 800 ft., silent, \$5 rental. (SPEIDEL, C. C., The Growth and Repair of Nerves. *Sci. Mo.*, 1933, 27, 47-49.)
288. SPRAGG, S. D. S., *Morphine Addiction in Chimpanzee*. New York: Barnard College, Columbia University, 1937. 300 ft., silent, sale price on request.
289. SPRAGG, S. D. S., and NISSEN, H. W., *Stylus Maze Experiments with Chimpanzee*. New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1935. 233 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3652. SPRAGG, S. D. S., Anticipatory Responses in Serial Learning by Chimpanzee. *Comp. Psychol. Monog.*, 1936, 13, No. 62. Pp. 72.)
290. STANTON, F. N., *Factors in Visual Depth Perception*. Columbus: The Ohio State University, 1936. 382 ft., silent, \$18 sale. (*Psychol. Abst.*, 1937, 11, 130.)

291. STONE, L. L., *The Primary Teacher at Work*. New York: Erpi Picture Consultants, 250 W. 57th St., 1931. 800 ft., sound, \$85 sale, \$7 rental.
292. STONE, L. S., and KRAMER, T. C., *The Development of a Salamander*. New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1936. 410 ft., silent, \$30 sale, \$2.50 rental.
293. TIFFIN, J., *Demonstrations in Physiological Psychology*. Iowa City: State University of Iowa, 1935. 300 ft., silent, \$14 sale.
294. TIFFIN, J., *Experiments in Measuring Human Reaction Time*. Iowa City: State University of Iowa, 1935. 250 ft., silent, \$16 sale.
295. TIFFIN, J., *Human Vocal Cords in Action*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1934. 127 ft., silent, \$18.40 sale. (*Psychol. Abst.*, 1937, 11, 4114.)
296. TIFFIN, J., *Infant Behavior*. Iowa City: State University of Iowa, 1936. 400 ft., silent, \$25 sale.
297. TRAVIS, L. E., *Handedness in Rats and Dogs*. Iowa City: State University of Iowa, 1935. 250 ft., silent, \$15 sale.
298. TRAVIS, L. E., *Stuttering*. Iowa City: State University of Iowa, 1935. 200 ft., silent, \$15 sale.
299. TROW, W. C., *European and American Psychologists*. Ann Arbor: University of Michigan, 1933. 150 ft., silent, \$12 sale.
300. TROW, W. C., *Handicapped Children and Clinical Types*. Ann Arbor: University of Michigan, 1933. 400 ft., silent, \$30 sale.
301. TROW, W. C., *The T-Puzzle*. Ann Arbor: University of Michigan, 1932. 400 ft., silent, \$30 sale. (*Psychol. Abst.*, 1937, 11, 4069. FORD, A., *Group Experiments in Elementary Psychology*. New York: The Macmillan Co., 1931. Pp. 105-106.)
302. TURNER, W. D., *Typical Visual Orientation of Young Rats*. Bryn Mawr, Pa.: Bryn Mawr College, 1934. 100 ft., silent, rental and sale prices on request.
303. VALENTINE, W. L., *The Behavior of Newborn Infants*. Columbus: The Ohio State University, 1934. 400 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3966. VALENTINE, W. L., et al., *Student's Guide for Beginning the Study of Psychology*. New York: Prentice-Hall, 1935. Cf. p. 67.)
304. VALENTINE, W. L., *The Development of Creeping in a Human Infant (R. M. V.)*. Columbus: The Ohio State University, 1932. 306 ft., silent, \$25 sale. (*Psychol. Abst.*, 1935, 9, 3962. VALENTINE, W. L., et al., *Student's Guide for Beginning the Study of Psychology*. New York: Prentice-Hall, 1935. P. 69.)
305. VALENTINE, W. L., *Development of Locomotion in the White Rat*. Columbus: The Ohio State University, 1930. 300 ft., silent, rental and sale prices on request.
306. VALENTINE, W. L., *Development of Prehension in a Single Child*. Columbus: The Ohio State University, 1933. 398 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3963. VALENTINE, W. L., et al., *Student's Guide for Beginning the Study of Psychology*. New York: Prentice-Hall, 1935. P. 69.)
307. VALENTINE, W. L., *The Development of Walking in the Human Infant (R. M. V.)*. Columbus: The Ohio State University, 1933. 218 ft., silent, \$20 sale. (*Psychol. Abst.*, 1935, 9, 3964.)

308. VALENTINE, W. L., *A Genetic Study of Manipulation*. Columbus: The Ohio State University, 1934. 375 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3695.)
309. VALENTINE, W. L., *The Hunger Drive in the White Rat*. Columbus: The Ohio State University, 1932. 400 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3694.)
310. VALENTINE, W. L., *Some Responses to Rotation*. Columbus: The Ohio State University, 1937. 400 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3678.)
311. VALENTINE, W. L., *Stair Climbing in an Human Infant (R. C. and R. M. V.)*. Columbus: The Ohio State University, 1933. 350 ft., silent, rental and sale prices on request.
312. VALENTINE, W. L., *A Trip Through a Psychology Laboratory*. Columbus: The Ohio State University, 1932. 400 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3548.)
313. VALENTINE, W. L., CAMERON, J., and CAMERON, F., *The Development of Creeping in an Human Infant (R. C.)*. Columbus: The Ohio State University, 1931. 400 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3966.)
314. VALENTINE, W. L., and STANTON, F. N., *Some Physiological Reactions to Emotional Stimuli*. Columbus: The Ohio State University, 1932. 390 ft., silent, \$30 sale. (*Psychol. Abst.*, 1935, 9, 3591.)
315. VALENTINE, W. L., TROYER, M. E., and BROWN, MARY ANNE, *Eye Movements in Reading*. Columbus: The Ohio State University, 1936. 284 ft., silent, rental and sale prices on request.
316. VALENTINE, W. L., WENRICK, J. E., and SARBIN, T. R., *The Development of Behavior in the Chick*. Columbus: The Ohio State University, 1936. 250 ft., silent, rental and sale prices on request.
317. WARDEN, C. J., *The Use of Tools by Cebus and Rhesus Monkeys in Problem Solving*. New York: Columbia University, 1937. 300 ft., silent, rental and sale prices on request.
318. WATSON, J. B., *Experimental Investigation of Babies*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1919. 480 ft., silent, \$45 sale. (*Psychol. Abst.*, 1937, 11, 6061. WATSON, J. B., and WATSON, R. R., *Studies in Infant Psychology*. *Sci. Mo.*, 1921, 13, 493-515. WATSON, J. B., *Psychology from the Standpoint of a Behaviorist*. Philadelphia: J. B. Lippincott Co., 1924. Cf. pp. 219-226; 259-270.)
319. WESSELL, N. Y., and CARMICHAEL, L., *Twenty Dynamic Patterns of Expression in Which Only the Hands and Arms Appear*. Chicago: C. H. Stoelting Co., 424 N. Homan Ave., 1935. 275 ft., silent, \$23.50 sale. (*Psychol. Abst.*, 1935, 9, 5522. CARMICHAEL, L., ROBERTS, S. O., and WESSELL, N. Y., *A Study of the Judgment of Manual Expression as Presented in Still and Motion Pictures*. *J. Soc. Psychol.*, 1937, 8, 115-142.)
320. WILDENBERG, R., and IRWIN, O. C., *Conditioned Feeding Responses in Young Infants*. Iowa City: Iowa Child Welfare Research Station, 1936. 200 ft., silent, loaned free. (*Psychol. Abst.*, 1937, 11, 2529.)
321. WOLFE, J. B., *The Use of Token-Rewards in Experiments with the Chimpanzee*. New York: Instructional Films, Inc., 30 Rockefeller

- Plaza, 1934. 210 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3657. WOLFE, J. B., Effectiveness of Token-Rewards for Chimpanzees. *Comp. Psychol. Monog.*, 1935, 12, No. 60. Pp. 72.)
322. YERKES, R. M., and BINGHAM, H. C., *Glimpses of Chimpanzee Behavior from Infancy to Maturity*. New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1931. 355 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 4417.)
323. YERKES, R. M., and STEWART, N. L., *Yale Laboratories of Primate Biology: Scenes from the Southern Division at Orange Park, Florida*. New York: Instructional Films, Inc., 30 Rockefeller Plaza, 1934. 326 ft., silent, \$27.50 sale, \$2.50 rental. (*Psychol. Abst.*, 1937, 11, 3539.)
324. ZENER, K., *Conditioned Reflex Behavior*. Durham: Duke University, 1936. 1,000 ft., silent, \$50 sale, \$3 rental. (ZENER, K., The Significance of Behavior Accompanying Conditioned Salivary Secretion for Theories of the Conditioned Response. *Amer. J. Psychol.*, 1937, 50, 384-403.)

(b) Film Sources

325. BELL AND HOWELL, *Catalog of Filmosound Library*. Chicago: 1801 Larchmont Ave.
326. BRAY PICTURES CORP., *Bray Library of Motion Pictures*. New York: 727 Seventh Ave.
327. C. H. STOELTING CO., *Supplements to General Catalog*. Chicago: 424 N. Homan Ave.
328. EASTMAN KODAK CO., *Eastman Classroom Films*. Rochester.
329. ERPI PICTURE CONSULTANTS, INC., *Instructional Sound Films*. New York: 250 W. 57th St.
330. COOK, D. E., and RAHBEK, E. C., *Educational Film Catalog*. New York: H. W. Wilson Co., 1936. Pp. xii+134.
331. COOK, D. E., and RAHBEK, E. C., *Supplements to Educational Film Catalog*. New York: H. W. Wilson Co., 1937, January, April, July, October.
332. EDITED PICTURES SYSTEM, *Catalog of 16 mm. Films*. New York: 330 W. 42nd St.
333. THE EDUCATIONAL SCREEN, *1,000 and One, the Blue Book of Non-theatrical Films*. Chicago: 64 E. Lake St.
334. FILMS, INC., *Catalog of 16 mm. Films*. New York: 330 W. 42nd St.
335. FITZPATRICK PICTURES, INC., *Catalog of Films*. New York: 729 Seventh Ave.
336. GARRISON FILM DISTRIBUTORS, *Blue List of Better Films*. New York: 730 Seventh Ave.
337. GAUMONT-BRITISH PICTURE CORP. AMER., *Instructional Films*. New York: 1600 Broadway.
338. HARVARD FILM SERVICE, *Educational Films*. Cambridge, Mass.
339. INSTRUCTIONAL FILMS, INC., *Film Catalog*. New York: 30 Rockefeller Plaza.
340. INTERNATIONAL EDUCATIONAL PICTURES, INC., *Motion Pictures of the World*. Boston: 40 Mt. Vernon St.
341. VICTOR ANIMATOGRAPH CORPORATION, *Directory of Film Sources*. Davenport, Iowa.

BOOK REVIEWS

VERNON, M. D., *Visual Perception*. Cambridge: At the University Press; New York: The Macmillan Company, 1937. Pp. xi+247.

It would be no small achievement for anyone to select 375 experimental articles as representative of the field of visual perception. It would be a remarkable accomplishment to read each of these articles thoughtfully and critically, attempting always to see the common problem through the haze of local terminology and special bias. And if these two accomplishments were combined with a veritable genius for reducing an article covering perhaps two-score pages to one or two paragraphs of trenchant summary, the results would inevitably constitute a contribution of very genuine importance to present-day psychology. Such, in the opinion of this reviewer, is the status of Miss Vernon's *Visual Perception*.

The author writes that the volume is intended to supply "a thorough knowledge of the experimental discoveries relating to the perceptual processes, their functional nature and the outcome of their operations." Her success in approaching this ambitious goal rests upon an obviously catholic knowledge of the literature of visual perception from the 'classics' of the late 19th century down to the contents of last year's journals. The individual items are arranged in orderly fashion under familiar categories after reduction to brief compass in a manner that must arouse the envy of critical readers who are acquainted with the original publications.

Let those who wish to do so object that it is only a digest! They will be justified in that the volume contains no new theory of perceiving and contributes little to the systematic framework within which the individual researches are to be oriented. They will be justified in that the primitive framework that is employed suffers directly by contrast with the brilliance with which the individual items are abstracted. But they will be overlooking the more important fact that only rarely has any field of psychology been represented in a digest of such uniform excellence.

Although the index exhibits only a series of presumably equivalent chapter titles, the author informs us that the materials in the book fall naturally into four major divisions. The first of these divi-

sions—consisting of four chapters—is concerned with the phenomenal development of the perceptual process. A review of results from widely separated laboratories leads the author to conclude that one may discern four “fundamental stages in the process of perceiving.”

- a. Stage of vague awareness of ‘something there’
- b. Stage of the generic object
- c. Stage of the specific object
- d. Stage of understanding of meaning (including tendency to response)

Each of these stages is characterized on the basis of experimental analysis. Modifying and secondary factors are briefly considered. A two-page treatment of reading serves to introduce the problem of perceptual meaning; theories of meaning and their supporting experimental evidence come in for brief discussion. The concluding chapter, on “structure of the field of awareness,” briefly states the position of the structuralist and sets the stage for the consideration of attention with which the second section begins.

The author's second division consists of a single chapter in which she concerns herself with the influence of attitudinal factors on perception. After discussing those general attitudes which affect perceiving and its products, Miss Vernon grapples in none-too-happy a fashion with the topic of attention. Her treatment here suffers from her effort to treat under a single heading an attitude, a performance, and a characteristic of the products of that performance. The chapter closes with an examination of certain investigations relating to the influence of familiarity in perceiving.

The third—and by far the most extensive—section of the volume has to do with what the author calls “the objective structure of the visual field.” (This term ‘objective’ may prove misleading to those who are not acquainted with its usage by Gestalt psychologists; its connotation here must not be confused with the sense in which behaviorists have employed it.) The section begins with a consideration of the physical qualities of the stimulus and works out from this a discussion of the phenomenal organization of perception. One chapter is devoted to spatial perception. This strikes this reviewer as the most superficial chapter in a volume pleasantly free from superficiality; the author proves unable to resist the common temptation of writing on the perception of tridimensionality by importing ‘sensations’ and ‘inferences.’ Immediately following are three excellent chapters dealing respectively with the properties of figure and ground, with certain basic characteristics of visual con-

figurations, and with the phenomena of constancy. Without becoming a convert to *Gestalttheorie*, Miss Vernon has succeeded in presenting clearly and in an integrated manner many of the more important contributions of investigators in these fields. The section closes with an obviously abbreviated treatment of the more common aspects of apparent movement.

The final section of the volume deals with the genesis of perception in children and with the typological classification of individual differences. The latter topic is taken to include a range of authors from Kretschmer to Rorschach and a range of materials from Galton's ideational types to the phenomena of synesthesia. An appendix presents descriptions of some of the more familiar types of tachistoscopes, and an appended bibliography provides in convenient form references to the original sources from which the volume was documented. Illustrations are used sparingly throughout; in some cases one regrets that the author has relied on verbal description when a single line-cut would have made the matter much more readily comprehensible.

It is obvious that Miss Vernon has read widely and thoughtfully; such a book could not have been written by farming out individual items to graduate students. One lays aside the volume with the conviction that, while experts in the several fields represented may quarrel with the selection of items to be abstracted, none will question the uniform excellence of the abstracts themselves. It would be difficult to conceive of anyone so sophisticated in this field as to be able to read the volume without profit; and for the newer generations of psychologists it seems highly probable that *Visual Perception* is destined to become a familiar and valued landmark in a wide field of investigation.

JOHN G. JENKINS.

University of Maryland.

ROBACK, A. A., *Behaviorism at Twenty-Five*. Cambridge, Mass.: Sci-Art Publishers, 1937. Pp. 256.

Dr. Roback's attitude toward contemporary behaviorism is reflected in the difficulty he found in choosing a title for his book. He says in the preface (p. 14):

"It was not an easy matter to find a suitable title for this essay. I must confess that 'The Passing of Behaviorism' has suggested itself, with subsequent variations, such as 'Passing Out,' and 'Passing On.' Each of these uses has its special connotation—'passing out' suggesting the state of auto-intoxication which behaviorism had permitted itself to fall into. 'Passing on' is the more euphemistic and most hopeful phrase, but what a setting for a subject like behaviorism!"

It is unfortunate that Dr. Roback chose as his task a vehement denunciation of behaviorism and behaviorists at a time when the lessened vigor of the movement calls instead for interpretation and evaluation. He might have directed his scholarly abilities to an estimation of the changes which have taken place within behaviorism, and to the persisting influence of behaviorism in quarters where it is disavowed. One thinks of the changes in Lashley's writings, of Boring's espousal of a behaviorist theory of meaning, of the modifications which have come in successive editions of once behavioristic textbooks such as those of Perrin and Klein, and Dashiell. Dr. Roback lists 10 present sympathizers with behaviorism and 27 representative behaviorists without an adequate analysis of the shifts in viewpoints since his earlier book. Of Lashley he says (p. 160): ". . . While he has brought succor to the behavioristic camp through one or another of his researches, he does not appear to show too great concern about the Movement at present."

There are no details about Lashley's attack on the reflex concept, or about the work of his students giving evidence for an innate basis of vision: materials much more relevant for an estimate of behaviorism than a statement hinting at a vague shift in attitude.

Of Tolman's system he says (p. 162):

" . . . Some of his curiously compounded terms, showing the relation of the given act to a goal, sound like translated names of Indian chiefs."

Tolman's affiliation with current operationism, and with the logical positivism of the Vienna group, particularly his collaboration with Brunswik, go unmentioned in the text. This is all the more regrettable because the bibliography indicates that Dr. Roback is familiar with these interrelationships.

The professional service of the book lies in its bibliography on behaviorism of 329 titles, supplementing the 238 titles in the earlier book.

ERNEST R. HILGARD.

Stanford University.

SOUTHALL, J. P. C., *Introduction to Physiological Optics*. New York: Oxford University Press, 1937. Pp. x+426.

Southall's *Introduction to Physiological Optics*, in the first place, is written so as to capture and sustain interest, a virtue in exposition seldom so well attained. Not only through directness of statement and orderliness of sequence, but through anecdote, the content of the

book is impressed upon the reader, who absorbs it as if busied with a narrative. However, in some places, disadvantages which will be brought out later are incurred by this freedom.

It was his stated purpose to avoid being too prosaic, as scientific expositions often are, and yet be accurate and trustworthy as far as he went. He has aimed at a comprehensive view of the whole picture for a wide variety of individuals, from intelligent laymen to specialists in physics, physiology, psychology, and biophysics, as well as ophthalmologists and illuminating engineers.

The book is pleasant in form as well as in content. The pages are attractive and inviting to read, made so by the choice of type and by the frequent use of two sizes to the page, and by bold face for sectional headings. The importance of the appearance of the page was certainly aptly recognized.

Each problem is unfolded historically. Names of contributors even as far back as the thirteenth century are copiously sprinkled throughout. They appear in capitals and are in lieu of any sort of reference lists at the end of the chapters. Sometimes the citations are complete, but usually they consist in only the names, with birth and death dates, which, incidentally, also appear with them in the index. It is hard to tell whether or not such injections annoy most readers, though they do immediately and constantly orient the facts and keep the pages from becoming visually monotonous.

Throughout, it seems that the author has succeeded in his wish to be accurate and trustworthy, so that this will not be an issue in this review. Deviations, as are always to be expected in a verbally crystallized cross-section of something ever on the move, are exceptionally slight in his case.

For psychologists who are especially interested in matters of vision, a brief comparison with Parsons' *Introduction to the Study of Colour Vision* is given. Aside from the more recent treatment of vision by Troland in his *Psychophysiology* and those in the *Foundations* and *Handbook* edited by Murchison, Parsons has been for psychologists an important, if not the chief, reference in English for the last twenty or more years.

Naturally, one of the differences in the two texts arises out of the difference in times written, Southall having the opportunity to include important facts that were not known at the time of the earlier book. The studies of Hecht have received extensive inclusion and are the fullest example of this. However, some names such as those of Troland and Cobb are conspicuously absent, an unfortunate contrast

to the presence of names in connection with trivial items whose authors were not even workers in vision.

Southall chose not to include anything on the nerve physiology of vision, a field which he places in the category of the near-occult. How he could maintain this attitude in the light of the kind of facts that are being discovered in this field, and when he is willing to include the guesses that are a large part of color-vision theories, is not understandable. Inasmuch as he made this choice, the works of Adrian and co-workers, Hartline, Graham, Granit, Creed, and others who have been determining how the sensory message becomes organized, are not mentioned. It is through their work that the greatest hope lies in reducing the present stock of uncertainties in the subject, and so far they have done well.

Another difference between Southall and Parsons, and one not arising out of time written, is Southall's fuller treatment of binocular vision, wherein he includes descriptions and diagrams of many stereoscopic instruments. Parsons skims over binocular vision with only several casual allusions.

Southall, as would be expected, also devotes a chapter to corrective eyeglasses and one to the matter of myopia, hyperopia, and astigmatism. These subjects could not have been expected to have had much, if any, attention in Parsons, but a knowledge of them is important for psychologists in both laboratory and clinic. He also includes a chapter on the movements of the eyeball in its socket, a subject absent in Parsons.

Southall leaves his historical stride in approaching theories of color vision, and thus includes fewer of them than Parsons, and gives no place to some of the most recent ones.

No attention is focused on the subject of photometry. A little concerning it is scattered here and there in a purely incidental manner, an example of the fact that the way he tells things makes good reading but poor reference. And by test, I find the index does not obviate this drawback.

Another shortcoming of his anecdotal method is his meanderings among the early qualitative methods and findings in preference to centering on the more direct and better controlled ways by which facts are obtained nowadays, and the knowledge gained from them. Another expression of the same tendency is that, in the attempt to give variety, he quotes from others (not authorities), when the phenomena could have been described more directly in his own words and in a manner more in keeping with the dignity of a text.

But in short, Southall is a good place to send the graduate student in psychology for a book-length bird's eye view of vision and the visual sense-organ, except for the one omission of the nerve physiology involved. A few places the reader can skip if the detailed mathematics become confusing. That is to be expected in almost any treatise. The book has made enough additional material (both new and old) available to be highly desirable on the bookshelf of anyone primarily interested in vision. It is also very appropriate for those who do not wish to possess a number of books on this subject. I would keep far from saying that it is "just another book" among the ever-growing number written.

S. HOWARD BARTLEY.

School of Medicine, Washington University.

DANTZIG, TOBIAS, *Aspects of Science*. New York: The Macmillan Company, 1937. Pp. xi+285.

Aspects of Science itself has two distinct aspects. Though the form of the volume is intricately articulated with the content, they both stand out in clear relief.

The content aspect constitutes an excellent and fairly popular presentation of a number of important scientific topics. Dantzig discusses among others the nature of causation, space, time, number, geometry, and the mathematical infinite. The ideas expounded, which for the most part are historically oriented, are presented in a style at once informing and attractive. Not infrequently are the discussions enlivened with apt biographical illustrations and allusions to social and cultural background. This book is popular science in the best sense of that term.

The form of the volume may be described as the faith pattern. The author describes the book as an essay on faith, and to faith with its ensuing doubts it is dedicated. Though Dantzig is careful to distinguish that the faith of his book is not the faith that moves mountains, but the faith that makes mountains yield up material treasures, this faith-form not only gives a particular tang to the discussion but colors the fundamental ideology as well.

Dantzig pictures the scientist as hopelessly pitted against a recalcitrant universe. He has the cynic declare that the scientist as the Master of Destiny is afloat without anchor or rudder and that Fate is rocking the boat. The only resource the scientist has for coping with this hapless situation is his power of reasoning. In

common with most mathematicians Dantzig plays up to the full the processes of extreme abstraction and generalization. Geometry, he asserts, is the prototype of all rational disciplines, and the work of the scientist lies fundamentally in that rarefied domain where a contradiction or a pointed antinomy is more destructive than a planetary collision. It is not surprising, therefore, that the author's final scientific position is a solipsistic version of the Protagorean doctrine that man is the measure of all things. Accordingly, faith is the leitmotif of his entire composition. Though the scientist is different from the theologian, the former's motivating force and operational procedure are both based on steady faith and recurrent doubt. The scientist constructs mathematical models in the hope that they may somehow reflect the image of phenomena.

"The scientist has resigned his mission to unravel the chaotic universe of man's sense impressions; he is now engaged in an intellectual game which is being played with hypothetical scales, clocks, and quanta in the shadowland of number, form, and chance."

Must we accept this as anything more than a possible appraisal of science? Contrast with it the view that the scientist is a worker with a job he wants to do and enjoys doing. Whatever his motive as a man may be, as a scientist he is interested in the nature of some phenomenon, whether it concerns planets, the earth, the chemistry of a thing, plants, animals, human events (social evolution, organization, etc.), or the psychological actions of persons. True, the achievement of significant knowledge and its effective control entail great difficulty and enormous labor, but why not interpret this fact as a challenge of nature rather than a revelation of mystery? If we ascribe faith to the scientist, we mean only that he believes himself capable of carrying on his work or that his labors will yield results.

This alternative view, obviously in sharp contrast to the faith-form attitude, places scientific work with the everyday business of life, with technology and with art, rather than with religion. Investigative and faith behavior resemble each other superficially only because both involve the use of abstractions and symbols. But how can we confound such different kinds of abstractions and symbols? Only when we confuse the abstractions contrived for carrying on scientific operations with abstractions derived from cultural inheritance can we confuse science with faith. The logic of particulars provides us a criterion for distinguishing these two forms of abstractions. Faith abstractions are created to save us from "weariness and fear of oblivion," whereas scientific abstractions are made by specific

individuals to guide them in their contacts with specific stimulus objects. When persons concern themselves with the abstractions of conventional belief they jump the gap between science and sentiment. Science as an enterprise of labor and construction is no more tolerant of the sentimentalist than of the promoter, the brass hat, or the drum major.

We are free to choose then between Dantzig's view of the scientist who faces a hostile universe with symbols of faith, and the artisan who is progressively learning to work with new and intricate materials. Though scientific work constitutes more refined and sophisticated interbehavior with phenomena than is the case with the individual's everyday contacts with things, there is a definite continuity and homogeneity in the procedures. Though sometimes the water be muddy and alltimes the bed meanders, still the same stream flows on. Mensuration may become geometry, geometry may turn into analysis with a radical independence of any particular space; analytical geometry may develop into the study of the most abstruse dimensions and manifolds. In every instance, however, we may regard the scientist as operating with definite materials, even if they are substitute symbols for other substitutive symbols. Mathematics may be made into a game or into a mysticism, but in both cases it will be the work of man.

The investigator of natural phenomena will concern himself, of course, with such concrete things as we have mentioned above. However much he may use verbal and numerical symbols they can only serve as instruments to further his knowledge and control of such things. The scientist is not a contemplator of symbols nor even a gladiator in the shadowy arena of abstractions. He is a laborer doing his share of the world's work.

Dantzig is alive to the vanity of conventional scientific abstractions. In the last chapter of this book he points out that realism with its space, time, and truth absolutes has gone by the board. The absolutistic chaos of sense impressions he thinks has also disappeared beneath the waves. What is left? His answer: Instruments and mathematics. Good! But these according to Dantzig land us in the lap of faith. There must, then, be different ways in which instruments and mathematics are used. If science is to prevail, they must be employed as aids in man's interbehavior with the nature of which he is a part.

J. R. KANTOR.

Indiana University.

BORING, E. G., LANGFELD, H. S., WELD, H. P., and Collaborators,
A Manual of Psychological Experiments. New York: John
Wiley and Sons., Inc., 1937. Pp. ix+198.

This volume is the second in the introductory textbook series published under the editorial direction of Boring, Langfeld, and Weld. With two exceptions, the experimental outlines have been written by the contributors to *Psychology: A Factual Textbook*, and the general topical organization of the manual is identical with that of the earlier work. The fifty-nine problems (with several alternative or supplementary experiments) are distributed according to subject and author, as follows: the response mechanism, two (Carmichael); psychological measurement, two (Chapman); sensory processes, seventeen, as follows: vision, five (McGregor), audition, five (Wever), taste and smell, two (Zigler), somesthesia, four (Dallenbach); psychophysics of intensity, one (Volkmann); perception, ten, as follows: space, three (Brown), time, two (Tinker), movement, one (Stevens), perceiving in general, four (Weld and Feldman); learning, eight (McGeoch); imagery, three (Bray); pleasantness and unpleasantness, three (Beebe-Center); emotion, three (Landis); action, four (Langfeld); thought, three (Humphrey); personality, five (Katz).

The major considerations which enter into the evaluation of an introductory laboratory manual can be classified under the following four headings: first, choice of experiments (their scientific importance, contemporaneousness, representativeness); second, adaptability to diverse institutional conditions (involving variety of experiments and simplicity of apparatus); third, pedagogical characteristics (format and general organization of the text, illustrations, tables for data, crucial questions, etc.); fourth, general intellectual tone (a 'configurational' phenomenon, perhaps, which reflects the scientific discrimination and imagination of the author). This manual is a very superior educational instrument, as judged by any one of these four general types of criteria. In this volume the editors have conceived, and the authors have executed an instructional project which should contribute enormously to the improvement of laboratory courses in psychology. Irrespective of an instructor's systematic position or textbook predilections this manual can serve as a most effective medium for teaching psychology by experiment.

The organization of instruction in the first course constitutes the most difficult, and perhaps the most important, educational problem which faces a department of psychology. To a great extent the type

of first course offered in a given college will depend upon the general curricular pattern of the college, the number of students to be taught, and the instructional resources of the department. Because of variations with respect to these conditions it will never be possible to standardize the content and teaching methods of the first course, but it is not inconceivable that two distinct types of introductory courses might be evolved, each with well-defined educational objectives and with corresponding pedagogical implementation. One of these courses would be a brief survey of the more important materials of psychology, based upon a carefully written textbook which presented a somewhat generalized account of the problems, methods and principles. The other type of course would be a systematic, intensive study, accompanied by laboratory work. Since both practical considerations and variations in educational theory would seem to demand both types of courses, and since both types of courses are now being attempted, it would seem reasonable to suggest that textbook writers cease trying to meet both kinds of requirements within a single book. Furthermore, I should like to propose the consideration that textbook writing for the systematic course can best be done by the 'collective' method which the editors of this series have inaugurated. Several advantages seem to inhere in this method: first, a chapter written by a specialist in that field will reflect a discriminative handling of the material and a richness of background which the non-specialist rarely achieves; second, revisions can be written more rapidly and the book can therefore be more easily kept up to date; third, the participation of many people, with the resulting interchange of ideas, should contribute materially towards the development of a unified science of psychology.

LYLE H. LANIER.

Vanderbilt University.

REIK, THEODOR, *Surprise and the Psycho-Analyst*. New York: E. P. Dutton and Company, 1937. Pp. 294.

This book, translated from the German by Margaret M. Green, is an attempt to describe an analyst's primary task—conjecturing and comprehending the unconscious processes of another individual. The nature, direction, preliminary conditions, and aims of the process of grasping the unconscious of another person are treated. From the book are excluded such topics as the methods, theoretical assumptions and therapeutic functions of analysis. In fact everything pertaining to the technique of analysis as ordinarily understood is

omitted, leaving for consideration only the psychological and "heuristic" aspects.

Chapter titles, in order, are as follows: Introduction—Psychology Is Not Self-Evident; Conscious and Unconscious Observation; Noticing Attention and Taking Note; From the Truly Startling to the Startlingly True; The Psychogenesis of Analytical Interpretation and of Wit; Knowledge Experienced and Knowledge Learnt by Rote; There Is No Royal Road Through the Unconscious; Point of Departure, Pause, Resumption; Concerning Tact, Time, and Rhythm; The Distinction Between Memory and Reminiscence; An Uncomprehended Case; The Question of Evidence—Conjecture and Comprehension; The Psychical Process of Conjecture; The Original Nature of Comprehension; The Instinctive Basis of Psychological Conjecture; Concerning Reciprocal Illumination; The Significance of Recurrent Reflection; The Experience of Others in the Ego; The Psychical Mechanism of Anticipation; The Shock of Thought; Psychological Cognition and Suffering—The Courage not to Comprehend.

The process of conjecturing and comprehending the unconscious processes of another person involves first the conscious or potentially conscious perception of the subject-matter until it dives down into the unconscious mind of the analyst. The second part of the process consists of the unconscious assimilation of the data; the third and final step, of the reëmergence into consciousness of the data so assimilated as to allow their description.

The data presented to the analyst for comprehension include the patient's speech, silence, gestures and the like; but these items are not all. The analyst supplies the remainder from his own unconscious mind. The remainder is the result of unconscious perception (the meeting of the unconscious minds of the analyst and the analysant). Without observing or attending to them, perception is made of the features, bearing, olfactory nuances, warmth, clamminess, softness of touch, twitching of the facial muscles, movements of the hands, and other neuro-dynamic stimuli.

In addition to the above mentioned characters, of which we are unconscious but which fall within the group of sense modalities of which we have awareness, there are other data which aid in shaping the analyst's impression of another person. The nature of these latter data and the senses through which they are perceived are only surmised, being entirely without the reach of consciousness. The assumption of existence of these senses is supported, Reik thinks, by

certain speculations as to how bees sense their direction, how birds of passage find their way, and how various animals have 'instinctive realization' of approaching danger. Degener, for example, has assumed a telepathic communication to obtain in caterpillar societies, and Frish has described communicative antenna movements made by ants. "Animals would have no need of psychology, in the sense of a theory of the inner life of other animals, because they know with instinctive certainty what is going on in their minds." Reik's logic here seems to run as follows: lower animals communicate in a manner unintelligible to us; therefore, we must have once had sensory capacity of which we are now unaware, and furthermore, still have, though we do not recognize it because of the favored action of our regular sense modalities. We say, for example, that we *scent* a danger. The like of this is taken as evidence of the action of these lost senses. To recapitulate, the process of grasping the unconscious of another involves direct psychical communication through senses now archaic yet functional.

Grasping the unconscious of another furthermore does not require attention directed to any particular group or variety of signals; to the contrary, *gleichschwebende Aufmerksamkeit* (poised attention) is necessary. Poised attention is a particular attitude of mind which aims at a withholding of voluntary or direct attention from any particular direction or set of circumstances and the assumption of a readiness to receive a variety of stimuli emerging from anywhere. Poised attention is contra-distinct to the sort obtaining in individuals who report an inability to concentrate. The situation concealed in such persons is intense concentration upon some specific unconscious content. They cannot, for example, solve picture-puzzles which are easy for an individual who has the knack of poisoning—letting go—his attention.

The process of analysis is marked by long-enduring perturbation accompanying the cognizance of repressed processes. The nature of this mental perturbation appears essentially as *surprise*. Surprise is an emotion which arises when an event comes at an unexpected time or under unexpected circumstances and under the condition that the event had formerly existed as a possibility in consciousness but had prior to the time of appearance vanished therefrom. Repressed processes are an excellent source of surprise, both for the analyst and analysant: for the analysant when recognition has penetrated deeply enough; for the analyst when the stirrings of his own Id have led him to penetrate to the depths of the patient's inner life. For the latter,

surprise is a sure signal that his own unconscious is involved in the recognition of unconscious relations. In fact, the very essence of analytic investigation is the surprise which is the confirmation of unconscious expectation.

"The technique of psycho-analysis cannot be learned by rote, but only experienced." Hence symbols, such as an umbrella, a mouse, or a kindly gesture to an old lady, may give a little insight into a disorder, but the analyst's unconscious mind supplies the real thing. It is only by experience that one can know or recognize the unconscious processes when they emerge from the depths. This emergence is preceded by a moment of blankness, a feeling of absence of mind. Mechanical coercion cannot help in the process of recovering unconscious material. For the nameless psychic forces within us to do this work, time is required.

The road through the unconscious is not systematic and orderly. No prescribed rules for procedure with regard to the imponderabilia of individual cases exist. The good analyst is not occupied with his plan of campaign during the process; a blind urge within himself teaches him the right way. It is like a journey through unexplored terrain. The exact itinerary cannot be worked out beforehand. To use system produces misunderstanding between two conscious minds. Two unconscious minds apparently understand each other if left alone. Reich represents the left wing of a movement to systematize analysis. Steckel and his school occupy the right wing; system is abandoned entirely and everything is left to the analyst's ideas which he rather forces upon the patient. Reik is intermediate to these extremes, holding that analytic theory is of secondary value to an analyst in comprehending the unconscious of another.

The analyst makes known to the patient the interpretation which his unconscious has worked out when the patient is only one step from making the interpretation himself. This moment is known unconsciously. It is all a matter of rhythm—rhythm between the instinctive processes of patient and analyst.

Reik's distinctions between memory and reminiscence are unusual, as are his definitions of the two concepts. "Memory, . . ., is by nature unconscious." It maintains and conserves material which is by nature painful or unpleasant or which is too much, too strong, too direct, for our mental mechanism at the moment. So long as the material remains unconscious, so long is it "psychically immortal." "The small portion of it that becomes conscious confronts us as reminiscence." And conscious events are soon doomed to eternal

oblivion. "Reminiscence drags the past into the full light of day, but it illuminates as the setting sun does a landscape, soon to set in darkness." It is difficult to reconcile this view with studies of factors which influence learning, especially those pertaining to practice. Perhaps it is compatible with Dunlap's *beta* hypothesis.

This book is disappointing to one who entertains the hope that psychoanalysis may be made more objective. It is replete with illustrations of how the unconscious mind of an analyst has worked in simple cases. But these illustrations serve to elucidate, not to prove. Proof of all assumptions presented rests upon proclamation. Apparently, the test of truth in all matters is the same as that for ideas which emerge from the unconscious during analysis, to wit: ". . . anyone who accepts certain fundamental assumptions of analysis, and who thinks psychologically, will find his doubts vanishing, if he conducts the investigation conscientiously himself." This is an unsatisfactory criterion for a method which is extolled for its heuristic qualities.

JOHN B. WOLFE.

University of Mississippi.

BOWDEN, A. O., and MELBO, I. R., *Social Psychology of Education: Applications of Social Psychology to Educational Problems*. New York: McGraw-Hill Book Company, Inc., 1937. Pp. xv+296.

This book is "fundamentally concerned with the human elements in the educational process and the social psychological factors involved in the interaction of pupils, teachers, administrators, and community." The authors have attempted to add social psychological principles to the means of understanding and managing a variety of educational processes, ranging from recitation, school and classroom control, attitudes, values, and personality, to the problems of the administrator such as rumor, gossip, propaganda, public opinion, and failure of teachers. The principles employed in this orientation of education are mainly those familiar in the work of Park and Burgess, Thomas and Znaniecki, Ross, and Bogardus.

The book is intended as a text for use in teachers' colleges, and it is well written. Its contribution, which seems a valuable one, is that of providing a means of sensitizing the prospective teacher to important aspects of educating which supposedly would otherwise be neglected in the usual teachers' curriculum. The task is not left to the student to transfer automatically the principles of a course in

social psychology to teaching problems; the integration is made for the student.

The recurrent basic theme is that mind, personality, values, and attitudes are products of the social environment, in which the school plays a large part. Motivation is accounted for in terms of Thomas' Four Wishes. Strictly from the standpoint of social psychology, the book contains nothing new; indeed, from the psychological point of view the book leaves a good deal to be desired. On several points there are errors of fact, *e.g.* that insanity is "essentially" an "hallucinatory" basis of adjustment (p. 104), and that facial expression is a useful index of guilt (p. 202). The practical utility in the average school of the association test of guilt (p. 202) may also be questioned. Certain other generalizations lack foundation. That the average school makes students "more logical in their thinking" (p. 228) requires empirical substantiation, as does also the statement that "no institution which devotes itself to spreading false propaganda will long endure" (p. 229). The contention that social changes are not made suddenly (p. 259) runs counter to much evidence, including that offered by L. P. Edwards, in *The Natural History of Revolution*, which book, incidentally, is based on the same psychological foundation as Bowden and Melbo's. To "Make haste slowly" may be good advice to teachers but it is not necessarily a conclusion forced by history.

The last chapter, "Polarity and Balance," attacks the educators' proneness to pedagogical fads, and urges as the antidote, "Do nothing too much." But by what evidence or logic is a mean necessarily more valid than its extremes? The authors are, of course, right in criticizing indiscriminate adoption of new plans and systems; but should such adoption be governed by adages? Rather should not evaluation hinge instead on experimentally demonstrated validity—as the authors insist in their sections on science and scientific attitude?

Bowden and Melbo have nevertheless made a valuable contribution by integrating important social psychological considerations into the education of teachers. Each chapter ends with "Thought Questions," problems for research, and a separate and adequate bibliography.

JOHN W. MCGARVEY.

Mount Holyoke College.

BENNETT, CHANDLER, *The Real Use of the Unconscious*. New York: The Dial Press, Inc., 1937. Pp. vi+380.

The real use of the unconscious according to Bennett is to carry man along the mystical way to God. And so we find here an interesting assimilation of psychoanalytic doctrine to the beliefs and arguments of religion. The psychologist may regard the exposition as significant raw material for tracing out an individual's reactions to what he regards as the most fundamental problems of life and existence. The exposition reveals an elaborate manipulation not only of the beliefs and words (Yin, Yang, Eros, Logos, Meaning, Symbol, Reality, Spirit, etc.) of Oriental and Occidental religion, but also the religious expressions of scientists. All this in order to pave a road to what the author believes is man's ultimate goal.

J. R. KANTOR.

Indiana University.

VERNON, H. M., *Accidents and Their Prevention*. New York: The Macmillan Company, 1937. Pp. ix+336.

This volume presents a comprehensive and critical review of the literature of accidents, their causes, and their prevention. Although it is written by a psychologist, its contents are by no means limited to a study of the psychological aspects of the subject. Without any arbitrary attempt at separation, the author discusses the economic, the engineering, and the socio-psychological problems involved. The volume is heavily documented and, although the first emphasis is always on British problems and British sources of information—including many citations from the daily press—the author quotes frequently from various American journals and occasionally from German sources. Accidents in the home, on the highway, on public carriers, and in factories are scrutinized for causes and for means of prevention; the subject of accident-proneness comes in for careful consideration. It is to be regretted that the high price of Vernon's book in this country will probably keep it off the shelves of many psychologists who would otherwise find it a useful and stimulating source of reference.

JOHN G. JENKINS.

University of Maryland.

BOOKS RECEIVED

DRAKE, R. M., *Outline of Abnormal Psychology*. New York: Longmans, Green and Company, 1937. Pp. 136.

FROLOV, Y. P., *Pavlov and His School: The Theory of Conditioned Reflexes*. New York: Oxford University Press, 1937. Pp. xix+291.

GARDINER, H. M., METCALF, R. C., and BEEBE-CENTER, J. G., *Feeling and Emotion: A History of Theories*. New York: American Book Company, 1937. Pp. xiii+445.

HOTEP, I. M., *Love and Happiness: Intimate Problems of the Modern Woman*. New York: Alfred A. Knopf, 1938. Pp. ix+235+vii.

INSTITUTE FOR JUVENILE RESEARCH (Paul L. Schroeder, Director), *Child Guidance Procedures*. New York: D. Appleton-Century Company, 1937. Pp. vii+362.

JORDAN, E., *The Aesthetic Object: An Introduction to the Philosophy of Value*. Bloomington, Indiana: The Principia Press, Inc., 1937. Pp. xii+275.

LANGER, S. K., *An Introduction to Symbolic Logic*. Boston: Houghton Mifflin Company, 1937. Pp. 363.

LATOUR, M., *Premiers principes d'une théorie générale des émotions*. (Nouvelle édition revue et augmentée: *Observations complémentaires*. Huitième série.) Paris: Félix Alcan, 108 Boulevard St.-Germain, 1937. Pp. 24.

SPROTT, W. J. H., *General Psychology*. New York: Longmans, Green and Company, 1937. Pp. ix+446.

VAN BIERVLIET, J. J., *La part de l'imagination: Essai philosophique*. Paris: Félix Alcan, 108 Boulevard St.-Germain, 1937. Pp. 202.

NOTES AND NEWS

THE Midwestern Psychological Association will hold its annual meeting at the University of Wisconsin, Madison, Wisconsin, on April 22 and 23, 1938, under the presidency of Dr. Arthur G. Bills of the University of Cincinnati. The title of Dr. Bills' presidential address will be *Changing Views of Psychology as Science*. A special feature of the meeting will be the celebration of the fiftieth anniversary of the founding of the psychological laboratory at the University of Wisconsin, one of America's earliest, by Joseph Jastrow.

THE next meeting of the Washington-Baltimore Branch of the American Psychological Association will be held at Goucher College in Baltimore on March 3. The present officers of the branch are: president, Anna Mathiesen of Goucher College; vice-president, Max Meenes of Howard University; secretary, S. M. Newhall of Johns Hopkins University; and treasurer, Mildred St. M. Percy, District of Columbia Schools.

AMERICAN PSYCHOLOGICAL ASSOCIATION, INCORPORATED

REPORT OF THE TREASURER

JANUARY 1 TO DECEMBER 31, 1937

Receipts

Balance, January 1, 1937.....		\$31,001.56
Dues of Members.....	\$5,542.00	
Dues of Associates.....	9,499.00	
Sale of Monographs.....	.81	
Sale of Yearbooks.....	16.00	
Sale of Programs.....	99.75	
Overpayment.....	.96	
Interest: On bonds.....	\$390.00	
On savings funds.....	346.37	
	<u>736.37</u>	
		15,894.89

\$46,896.45

Disbursements

Printing and Supplies.....	\$377.78	
Postage and Express.....	750.70	
Telephone and Telegraph.....	10.94	
Reprints and Cost of Printing Proceedings.....	827.98	
Yearbook.....	798.50	
Treasurer's Bond.....	65.00	
Safe Deposit Box.....	5.50	
Rent on Post Office Box.....	1.20	
Committee on the Study of Teaching Psychology.....	89.41	
Committee on Animal Experimentation.....	2.89	
Inter-Society Color Council.....	25.00	
Incidentals of Annual Meeting.....	546.81	
Secretary's Stipend.....	1,500.00	
Treasurer's Stipend.....	300.00	
Exchange and Collection Fees.....	2.33	
Subscriptions to Abstracts.....	8,271.00	
Subscriptions to Bulletin.....	206.00	
Annual Audit.....	400.00	
Petty Cash, Secretary's Office.....	25.00	
Expense of Moving Business Office from Princeton to Columbus		
Express.....	\$76.32	
Extra Clerical Salary.....	268.00	
Equipment.....	151.70	
	<u>496.02</u>	
		\$14,702.06

Balance on hand, December 31, 1937:

Petty Cash.....	\$5.57	
Checking Account.....	5,270.23	
Savings Accounts.....	14,918.59	
U. S. Government Bonds.....	12,000.00	
	<u>32,194.39</u>	
		<u>\$46,896.45</u>

Account of the Ninth International Congress Deposited
with the American Psychological Association:

On hand, December 31, 1937.....	\$2,700.47	
Interest.....	102.53	
	<u>\$2,803.00</u>	

FINANCIAL REPORTS OF PUBLICATION ENTERPRISES OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

PSYCHOLOGICAL REVIEW COMPANY

FINANCIAL REPORT

JANUARY 1 TO DECEMBER 31, 1937

Receipts

Balance, January 1, 1937.....	\$6,922.00
Subscriptions and Sale of Back Numbers.....	\$13,047.97
Advertisements.....	30.00
From Authors for Reprints and Special Charges.....	2,869.76
Commission on Monograph Account.....	416.25
For Transfer to Abstracts and Journal of Abnormal.....	479.65
For Transfer to American Psychological Association....	10.00
Interest.....	102.26
Credit for Outstanding Checks.....	40.97
Overpayment.....	69.81
Miscellaneous Payments.....	34.32
	<hr/>
	17,100.99
Receipts on Psychological Monograph Account.....	5,405.03
Sale of Proceedings of Ninth International Congress.....	14.90
	<hr/>
	\$29,442.92

Disbursements

Printing Regular Issues.....	\$10,783.85
Extra Printing for Prior Publication.....	599.30
Printing Reprints.....	2,347.81
Editors' Stipends.....	300.00
Business Office Salaries.....	1,733.30
Postage, Stationery and Office Supplies.....	159.29
Insurance on Back Numbers.....	5.00
Taxes, Deposit Box, Business Editor's Bond.....	21.32
Payments Transferred to Abstracts and Journal of Abnormal	479.65
Payment Transferred to American Psychological Ass'n..	10.00
Payments Refunded.....	133.80
Mailing Orders for Back Numbers.....	34.61
Traveling Expense.....	43.70
Collection Charge on Checks.....	.60
	<hr/>
	\$16,652.23
Disbursements on Psychological Monograph Account.....	4,160.72
Balance on hand, December 31, 1937:	
Petty Cash.....	\$1.27
Checking Account.....	3,602.66
Savings Accounts.....	5,026.04
	<hr/>
	8,629.97
	<hr/>
	\$29,442.92

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

FINANCIAL REPORT

JANUARY 1 TO DECEMBER 31, 1937

Receipts

Balance, January 1, 1937.....		\$3,889.99
Subscriptions.....	\$2,945.43	
Sale of Back Numbers.....	176.48	
From Authors for Reprints.....	71.82	
Interest.....	64.48	
Miscellaneous Payments	37.48	
	<hr/>	3,295.69
		<hr/>
		<u><u>\$7,185.68</u></u>

Disbursements

Printing 5 Issues.....	\$2,437.52	
Printing Reprints	206.72	
Clerical Work	460.00	
Editor's Allowance	150.00	
Supplies and Miscellaneous Office Expense.....	50.24	
Refunds and Miscellaneous Expense.....	42.63	
	<hr/>	\$3,401.11
Balance on hand, December 31, 1937:		
Petty Cash	\$3.34	
Checking Account	508.53	
Savings Account	3,272.70	
	<hr/>	3,784.57
		<hr/>
		<u><u>\$7,185.68</u></u>

PSYCHOLOGICAL ABSTRACTS

FINANCIAL REPORT

JANUARY 1 TO DECEMBER 31, 1937

Receipts

Balance, January 1, 1937.....	\$13,845.65
A.P.A. Subscriptions	\$8,271.00
Other Subscriptions	4,648.51
Sale of Back Numbers.....	480.23
Advertisements	506.80
Interest.....	53.73
Sale of Typewriter.....	24.00
For Reimbursement to A.P.A. for Editorial Expense....	1,754.10
Miscellaneous Payments	51.90
	<hr/> 15,790.27
	<hr/> \$29,635.92
	<hr/>

Disbursements

Business Office:	
Printing 12 Numbers.....	\$6,076.69
Cost of Changing Printers.....	259.41
Clerical Work	383.30
Miscellaneous Office Expense.....	44.61
Reimbursement to A.P.A. for Editorial Expense....	1,754.10
Refunds and Transfers to Review Co. and J. Abn....	72.33
Fire Insurance	9.00
	<hr/> \$8,599.44
Editorial Office:	
Salaries:	
Associate Editor	\$3,000.00
Secretary	1,500.00
Extra Clerical	54.10
Foreign Editors	120.06
Abstractors and Translators.....	1,459.48
	<hr/> \$6,133.64
Miscellaneous Office Expense.....	216.40
	<hr/> 6,350.04
Balance on hand, December 31, 1937:	
Petty Cash:	
Editorial Office	\$7.42
Business Office50
	<hr/> \$7.92
Checking Account	11,951.29
Savings Account	2,727.23
	<hr/> 14,686.44
	<hr/> \$29,635.92
	<hr/>

5

7
-
2
=

4

4

44
-
92
=